Occidental Medical Times

VOLUME XVII. SAN FRANCISCO, APRIL, 1903. NUMBER 4.

AN ADDRESS.

By J. L. Carson, M. D., Bakersfield.

Delivered at Meeting of San Joaquin Valley Medical Society, March, 1902.

Gentlemen of the San Joaquin Medical Society, Welcome; yes, a hearty welcome to all is the greeting spontaneously suggested from the sincere impulses of my heart. Permit me to express my gratitude and appreciation of the compliment and honor you have conferred by electing me to preside over this meeting, and accept, as a manifestation of the extent of appreciation, my ardent effort to officiate through exceedingly adverse conditions and circumstances, produced by my recent illness, from which, you will readily observe, I have not absolutely recovered. Thoroughly cognizant of my mental "sluggishness," resulting from physical derangement, and inability to offer a more able address, your kind and generous forbearance with my earnest, but imperfect, endeavors, and your patient indulgence in acknowledgment of my good will, is my earnest solicitation, that we may all derive marked benefit from this conference and most profitably accomplish the work before us in the interest of our noble profession. I sincerely trust that each member in attendance will distinguish himself or herself in the cordial cooperation and firmly-resolved determination of rendering this meeting a decidedly instructive, social, and generally successful issue.

The voluntary contribution of your best-directed efforts will certainly be most gratefully received for the mutual benefit of our association, and, in all probability, be instrumental in conscientiously preparing us to sustain the dignity, integrity, and progressive attitude commanding the influence and highly respectful acknowledgment of much larger and older organizations of our profession. It is obviously true that we are extremely interested in keeping our society up to the highest standard, and are eagerly determined to prevent the invasion of incompetent, unscrupulous, and immoral aspirants or quacks. The interchange of ideas, suggestions, and conclusions are undoubtedly profitable and stimulating to the brain and conducive of progressive medical and surgical achievements, therefore we may seriously realize the extreme importance of active interest and unabating energy and efforts for advancement and research. We meet to exchange views, to relate our individual experiences and methods devised "impromptu," which are most practical in emergency cases, also our success or otherwise from various theoretical standpoints, as advocated by others, realizing that the actual experience of one may prove a profitable lesson for the adoption of the progressive and intelligent mind of another. And by this opportunity being afforded for the mutual interchange of thoughts and experiences, our own usefulness may be materially increased. While our San Joaquin Medical Society may be considered only a subordinate organization, it should prove more beneficial, individually, in many respects than the older associations. Scientifically and intellectually, it should attain and maintain the same high standard of its parents, but socially and economically, it affords many advantages that may not be realized and enjoyed by the physician whom circumstances prevent from going far from home, and whose time is limited. The parent association represents one great claim. Its magnanimity would prove of inferior value without the superior quality, perfection and strength of each link composing its complete structures. Weak and imperfect links should have no place in the chain of medicine and surgery. Consequently, as we represent one link in that grand chain, and the strength and power of a chain is estimated by its weakest link: let us weld ourselves together firmly with imperturable tenacity both practically and professionally in every respect, therefore socially, and thus form a perfect link whose strength and ability may not detract one iota from the combination.

This grand and noble work, to which we are devoting our energies and lives, demands for its propagation and defense, that we as practicing physicians and surgeons learn to understand and affiliate with each other more intimately, to ascertain how much in common there is existing between us, and strengthen each other by the scientific discussion of methods and means of progressively advancing and executing our identical aims and exalted ambitions, thus creating and cementing the establishment of a fraternal feeling among the worthy members of our profession, where petty jealousies and sneering criticism, maliciousness, vindictiveness, and all that is disagreeable may be ignored, expelled, and find no food or crumbs for their miserable existence.

The modern physician and surgeon, either general practitioner or specialist, must be a man having a broad, liberal, well-balanced, investigative, and progressive mind and inclination, but conservative in his enthusiasm. He must be of a genial, amicable, charitable, moral, and honorable character in every respect, and live above the sphere, and in a purer atmosphere, than the malignant and corrupt, petty, and narrow-minded being, who sometimes gains admission to our grand profession. The most malignant infection we have to tolerate or guard against is the men who are gangrened by morbid selfishness, jealousy, sectarianisms, "pathys," fads, hobbies, etc., and are only imbued with very limited and narrow train of thought, minus skill and the superb excellence of a high moral character and genuine self-respect. The men who are endowed with a superabundance of unsophisticated presumption, and possess, or, rather, display, an unmitigated amount of "gall," substantiated by bold conceit, without brains or ballast are certainly another "much-to-be-dreaded" microbe. Our cause is superior, our aims just, and our ambitions elevating. Therefore let us ever keep vividly in mind that this meeting is for the most efficient confederation, and not for contention.

The three aspects of a physician's work should be considered, first, from a purely scientific and professional standpoint; second, the sociable and companionable, which should greatly aid and stimulate the success of the first; third, the business side, for the ultimate protection of the material gain, which is such an absolute necessity to the utilitarian. Medical and surgical science has, in a measure, progressive movements. In many respects, evolution is rapidly becoming revolution in the progress of medical affairs, and a practically new era is unquestionably ours. The late Professor Fenger, who loved surgery as a science, but hated it as a trade, and had sincere reverence for the teachings of the old masters, but craved the brilliant light kindled by modern research and diligent investigation, should, as an exemplary lesson, incite within us an unquenchable thirst and contagious enthusiasm for the brilliant achievements which seem within our grasp. For the progress in physical diagnosis during the past twenty years we owe much to the stethoscope, laryngoscope, ophthalmoscope, cystoscope, etc., and the accuracy with which the diminutive incandescent lamp aids the diagnostician in the exploration of otherwise obscure cavities and cysts, renders its use as indispensable to the physician as the X-ray has become to the surgeon. The curative value of the various rays of light for different conditions deserves earnest consideration; however, it is only in its infancy. In surgery and medicine the X-ray and various rays of light are rivals of importance with drugs against pathological conditions. Microscopy, bacteriology, and biology are as equally important features to be understood as a general knowledge of chemistry. Diagnosis from urinary analysis and microscopical examination of the blood is another great aid in our work. Would name many more important aids, but time forbids. Surgery is making marvelous strides, when we consider the wonderful progress in brain surgery, abdominal, and visceral surgery. Serum therapy is attaining a position in the first ranks of specific treatment. Paraffin injections are rapidly gaining favor in cosmetic surgery. By way of anesthetics, we will consider them later, and compare them with the "subarachnoid puncture" for the injection of cocain. Thanking you for your kind attention, and earnestly soliciting your hearty cooperation, I would wish you all, as an organization and individually, a season of usefulness and prosperity.

THE MUNICIPAL CONTROL OF MILK SUPPLY AS AN IMPORTANT SANITARY MEASURE.

By G. H. AIKEN, M. D., Fresno.

Read before the Fresno County and San Joaquin Valley Medical Society, March, 1903, Fresno.

There is no one article in our dietary which enters so universally into daily consumption, especially with invalids and the young, as that of milk. Neither is there anything which becomes so readily contaminated, nor, under certain conditions, a source of so much mischief, as milk. To produce and market a pure and wholesome article, therefore, is of grave importance, and to this end every community should be protected by every reasonable sanitary safeguard.

Having taken considerable interest in the matter of milk supply for cities during the past few years, and having been brought closely in touch with this subject of late by reason of my relation to the board of health, I considered the matter of sufficient interest and profit to call your attention to it this evening, and to state incidentally what has been accomplished toward the solution of the problem in the city of Fresno.

The number of cities and communities taking an active interest in this matter are rapidly increasing, and in many instances the results of their work are most gratifying.

Dairy Laws and Municipal Regulations.—Thirty-one states have laws relative to the sale of milk for city use, and practically all large cities have special regulations, either under the direct control of its board of health or a special commission. Many of these are quite efficient, others of very little practical utility. When we consider large cities such as Boston, Philadelphia, New York, Chicago, or San Francisco, with a milk supply coming from a radius of two or three hundred miles, it is not possible to obtain such careful or individual inspection of dairies as in smaller communities. Take, for instance, San Francisco, the most that can be exacted under present conditions is to inspect the milk for a proper percentage of butter fat, acidity, solids, and adulterants, leaving out the most important bacteriological examination, and without the least knowledge of the condition of the animals or surroundings where milk is produced. It may be readily seen that such inspection, while better than nothing, comes far short of meeting all sanitary requirements.

The general municipal regulation prohibits the sale of impure, adulterated milk, or milk from diseased or swill-fed cows, the use of preservatives or adulterations, and imposes penalties for violation of their rules. In some few cities, usually the smaller, very stringent and effective laws have been enacted. One of the best which has come to my knowledge is that of Meadville, Pa., a city of about 15,000 inhabitants, whose rules and regulations were largely copied from, and recently improved upon, by the Fresno Board of Health. Briefly stated, they are about as follows:—

Fresno Regulations.—Every one vending milk in this city must obtain a license from the board of health. Before such license is granted, his cows must be tested and inspected, also stables, yards, water supply, milk-house, wagons, utensils, etc.; then, if said inspection is satisfactory, he must enter into a written agreement, which is incorporated in his application for a license, that he will carry out his specific contract to the letter, or forfeit his license. There is a careful inspection from time to time by the milk inspector of milk-house, wagons, cows, food, premises, and all surroundings. These conditions are essentially the same as those imposed by the Fresno Board of Health. During the first year of this enforcement of the milk regulations in Meadville the mortality from enteric diseases in children was reduced 50 per cent—a result most gratifying.

In Fresno during the past year, nearly the same municipal regulations, but under far more adverse circumstances, the mortality from the same causes among children was reduced more than 33 per cent over former years.

Germany has gained the reputation in recent years of having made rapid strides in all matters pertaining to public sanitation, until she is now conceded to be equal, if not superior, to any country in the world. Hanover has long been looked upon as a model German city. Its water supply is beyond reproach, streets are kept scrupulously clean, markets and bathing establishments are above reproach. On the other hand, Washington, D. C., although a fairly clean city, contains a large number of parks and open spaces, and its water system is open to criticism, and one-third of its population are negroes.

Impure Milk Fatalities.—Now, the death-rate among children is generally considered a fair criterion of the height to which preventive sanitation has been carried, and the purity of the milk supply is the base upon which the health of the children depends. From these facts it might reasonably be expected that the death-rate of children in Washington would be far greater than in Hanover. However, such is not the case, as the mortality in Hanover is 60 per cent greater than in Washington.

The "Berliner" traces the high mortality among children in Hanover to impure milk, due to faulty inspection, and concludes that most children's diseases are closely connected with the milk supply. and that the city which is most vigilant on the milk question, and has a system of inspection of milk dairies, is ahead in civilization of the city where milk laws and dairy inspections do not exist. In Hanover they have practically neither milk laws nor inspection of dairies. The only possible offense is the addition of water. In Washington they have fairly good, though not perfect, milk regulations. Thus the statistics of infant mortality in Washington and Hanover would seem to offer convincing proof that pure milk is necessary for the preservation of the health of young children.

A Bacterial Limit.—The Fresno Board of Health has now incorporated in its milk rules, among some other minor additions, a legal restriction as to the number of bacteria per cubic centimeter which shall be allowed: A maximum of 50,000 from November 1 to April 1, and 75,000 from April 1 to November 1. So far as I have been able to learn, this is the only city in the United States which has enacted by law a compulsory standard as to the number of bacteria which shall be allowed in milk. While this standard is not what we desire, nor what it should be, yet it is much better than nothing, and places the dairymen in a position where they must maintain a reasonable degree of cleanliness to sustain this standard. I trust that within a year we may be able to lower the count to 30,000 bacteria to the cubic centimeter during the winter months and 50,000 for the summer months. In recent years milk commissions have been inaugurated, especially in large cities. Those of more recent date are to be found in Philadelphia and New York. Dr. H. L. Coit, of Newark, N. J., was the first to originate and organize a commission, which has been operated with success. Dairies are under the absolute control of this commission, and the milk is sold for fifteen cents a quart, which would be prohibitory in many places.

Milk Commissions—The objects of these commissions can not be better stated than in the words of Dr. Coit:—

"The objects of the commission are: To establish correct clinical standards of purity for cows' milk; to become responsible for a periodical inspection of the dairy under its patronage; provide for chemical and biological examinations of the product, with frequent scrutiny of the stock by competent veterinarians.

"Three general requirements, or standards of quality for the milk, have been formulated:—

"First, an absence of large numbers of micro-organisms and the entire freedom of the milk from pathogenic varieties.

"Second, unvarying resistance to early fermentative changes in the milk, so that it may be kept under ordinary conditions without extraordinary care.

"Third, having a constant nutritive value of known chemical 'composition, a uniform relation between the percentage of fats, proteids, and carbohydrates.' "

The commissioners in Philadelphia and New York are under the direct control of their respective medical societies, composed of a chemist, bacteriologist, veterinarian, also one or more able physicians. The strictest sanitary rules are enforced with all dairies under the jurisdiction of the commission; inspection, tests, and examinations to be made frequently, at the expense of the venders, which amounts to ten or fifteen dollars per month.

Dairymen enter into these contracts with the commission voluntarily, and are under no legal restraint. They aim to keep their dairies at all times above unfavorable criticism; thus a standard is maintained far above anything which could be made practical by legislation.

The New York commission has established two standards, "certified milk" and "inspected milk." For certified milk the maximum of 30,000 bacteria of all kinds to the cubic centimeter must not be exceeded, in order to obtain endorsement of the commission. This standard must be attained solely by measures directed towards scrupulous cleanliness, proper cooling, and prompt delivery. The bacterial count is made at the time of delivery of milk. Not less than four per cent butter fat is required as an average; there must also be all the other characteristics of pure, wholesome milk. In order that dealers who incur the expense, and take the precautions to furnish such milk, may have some suitable means of bringing these facts before the public, the commission gives them the right to use caps on their milk-jars stamped with the words "Certified by the commission of the Medical Society of New York." Dealers are only given this when all conditions imposed by the commission are complied with. With inspected milk much the same conditions are required, with the exception that 100,000 of bacteria per cubic centimeter are allowed from May 1 to October 1, and 60,000 from October 1 to May 1. The milk-jars under these conditions bear the inscription "Inspected Milk," instead of "Certified Milk." I very much doubt the utility of the two standards.

Philadelphia has much the same general sanitary requirements for dairies, inspections, etc., with the exception that a maximum of 10,000 bacteria to the cubic centimeter is established. To prove what might be accomplished along these lines by careful attention to details and scrupulous cleanliness, the product of one dairy in Philadelphia was subjected to a daily examination throughout the year, with the result that an average of only 2,800 bacteria to the cubic centimeter was obtained during the hot summer months, and 1,700 during the winter months.

The commission in Newark, N. J., has been unusually successful, gradually increasing its dairy to 400 cows, and producing over 4,000 quarts of milk, which sells at nine cents per quart.

A large company in Boston has been very successful in producing a high grade of milk from dairies situated in various parts of the country, distributing to many large cities. Some of this milk is sold at fifteen cents per quart, and difficult to supply the demand. Modified milk, as prescribed by physicians, is a special feature of this company.

State Law Needed—To procure milk which shall be as pure and wholesome as it is possible to be obtained is the aim of these various commissions and societies. God speed them in this life and health-saving service. These few special commissions and companies do not, however, meet the demands of the masses, especially of the poor, who require and consume it so extensively as an article of diet.

What is wanted is a pure and wholesome product, free from contamination, suited to the needs of the entire community, good enough for the rich and poor alike, at a cost within the reach of all. To this end, the first prerequisite would be the enactment of a state law requiring the appointment of a competent veterinarian in each county, whose duty it should be to inspect all cattle, and especially dairies, with a view to the elimination of any diseased animals. In each municipality we should demand the same purity and wholesomeness of all cream and butter brought to market as that of milk. It is inconsistent to demand a high standard of purity for the milk product, then allow cream and butter to be sold containing any form of adulterants, or perhaps laden with bacteria, or, at least, the effects of previous contamination. If you who doubt the importance of this would go with me to a creamery station, view the filth and debris after the process of separation, you would, indeed, be possessed of good digestion and strong stomachs if you continued to use cream and butter. As a proof of what may be found, Gasperini states he found viable germs of tuberculosis in butter and cream 128 days old. V. A. Moore, chief of the division of animal pathology, department of agriculture, describes an experiment in his laboratory, showing that tubercle bacilli will remain virulent for more than ninety days.

In addition to these safeguards, in large cities where it is not practical to inspect dairies and herds, a license should be required of every person selling milk under the following rules, with bonds demanded, and heavy penalties attached. All milk to have not less than three and one-half per cent of butter fat, or contain more than 87.50 of watery fluid, or less than 12.50 per cent of milk solids, with a specific gravity at 60° Fahr. which shall be between 1 and 29-1000 and 1 and 33-1000. Also a bacterial count which shall not exceed 50,000 per cubic centimeter from April 1 to November 1, and 30,000 per cubic centimeter from November 1 to April 1. All these conditions to be experted by a competent chemist and bacteriologist, under the control of the board of health. This, to my mind, would secure to any city a fairly uniform, pure, and wholesome supply of milk.

Bacteriology of Milk.—Practically all of the changes that take place in milk kept for any length of time are the result of bacterial growth. The mere presence of large numbers of bacteria in milk does not necessarily mean that it is harmful or unfit for consumption. I imagine a very erroneous idea prevails among many medical men who have not given this subject particular attention regarding the effects of bacteria found in milk and their relation to disease. A simple comparison of the number of bacteria in water and milk, or even that of sewage, from the standpoint of numbers alone will prove milk to be surprisingly bad. The milk that is supplied to many of our cities frequently contains more bacteria than is present in the city's sewage, and yet the former would in no way be as harmful for use as the latter. To many, bacteria of any description suggests disease, and should be destroyed. This is far from correct, as many bacteria serve very useful purposes. The delicate flavor of June butter is caused by bacterial action, and the manufacture of cheese is largely dependent on the growth of bacteria in milk. The action in milk known as souring is caused by certain species of bacteria which attack the sugar and convert it into lactic acid. These bacteria are certainly harmless within reasonable limits. It is the character, more than numbers, which makes for unwholesome or impure milk. A dozen pathogenic bacteria, say from typhoid or scarlet fever or diphtheria, would be far more dangerous and probably do vastly more harm than one million of other bacteria in a given amount of milk.

Bacteria common to milk are spherical bacteria, or "coccus," rod-shaped bacteria, "bacillus bacterium," and spiral bacteria, or "spirillum." Many of the harmful changes in milk are caused by spore-bearing bacteria and those producing putrefactive changes. The general condition of milk is such as to favor the growth of the species of bacteria that produce lactic acid. When present, these outstrip the other species and destroy them, hence, after a few hours, an examination of the milk will often show 99 per cent of the souring variety. Not all of the streptococci are dangerous to milk, by any means.

With milk at the ordinary temperature newly drawn from the cow, no better culture media could possibly be found; and numbers increase at a rate almost beyond conception. Of course their rate of increase depends largely on the temperature. According to Conn, a specimen of milk containing 153,000 bacteria to the cubic centimeter twenty-four hours later contained 85,000,000, and a sample of fresh cream containing 44,000 of bacteria to the cubic centimeter contained 1,300,000,000 when sour enough to churn. Von Freudenreich exposed a sample of milk containing 153,000 bacteria to the cubic centimeter at 59° Fahr., and one hour after it contained 539,570; two hours after it contained 615,250; four hours after it contained 688,000; seven hours after it contained 1,020,000; nine hours after it contained 2,040,000; twenty-four hours after it contained 85,000,000.

We can now readily understand when milk is transported ~~long~~ distances without proper cooling why bacteria exceeding numbers in ordinary sewage are not infrequently found.

Pathogenic Bacteria.—Milk may, of course, contain any one or several pathogenic bacteria, specific in each characteristic, toxic and deadly in their effects. It is now conceded that tuberculous udders always secrete milk containing tubercle bacilli; although a mooted question whether transmissible to the human family, no one would desire to accept the risk of using tuberculous milk.

Conditions necessary for the production of pure milk and marketing the same:—

The practical standard for the estimation of cleanliness and proper handling of milk is its relative freedom from bacteria. This standard must be attained solely by scrupulous cleanliness, proper cooling, and prompt delivery. The "Gospel of Cleanliness" is the motto which should swing over the gate of every dairy. It must be a constant, painstaking, methodical work from first to last, with the most careful attention to detail.

Bacteriologists have found that the number of bacteria in any given sample of milk is dependent upon two factors: First, care of the dairy; second, proper handling and cooling in transportation. Hence the bacterial count is a proper and reasonable gauge for cleanliness and care in the handling of milk. A very low bacterial count in a given sample would indicate care and cleanliness in every detail, while the presence of a large number would suggest carelessness and improper handling. The causes may be few or many, but any one is quite enough to occasion serious consequences. To eliminate these various factors for evil, it is necessary to consider the several sources of contamination and methods of prevention.

These may be any one or all of the following:—

(1) Condition of the cows; (2) condition of barn and surroundings; (3) condition of milkers; (4) condition of utensils; (5) process of cooling; (6) methods of transportation.

An abundance of pure water and

wholesome food is an absolute prerequisite to healthy cows and wholesome milk.

All dairy cows should be tested with tuberculin once or twice a year, also undergo a careful examination for all unhealthy conditions by a skilful veterinarian. The belly and udder should be shorn of all loose hair as occasion demands and groomed daily. Before each milking the udder and surrounding parts must be brushed and wiped with a damp cloth. This is a fruitful source for all kinds of dirt and debris. The bacteria that get into milk with filth are, as a class, the ones that cause the most damage, and they can be kept out by keeping the cows clean.

Example: Milk from four dirty cows, in a clean barn, with clean milkers, gave an average of 90,000 bacteria to the cubic centimeter; milk from four other cows of the same herd, carefully cleaned and milked by the same man, gave an average of only 2,000.

Stables and surroundings: Here the principle of cleanliness must prevail. Stables should be well ventilated and lighted, with no loft for the sifting through of dust. The floors should be tight and well drained with walls whitewashed twice a year. Manure should be removed daily, and gutters kept clean. It is very desirable to sprinkle land plaster on the floors after milking and cleaning stalls. This tends to destroy all offensive and unwholesome odors. Stables should be kept free from dust, as this contains numerous numbers of bacteria, which are almost sure to settle in the milk-pail.

Example: Milk from each of twelve cows in a stable showed a low bacterial count, except from one which stood next to a pile of dry feed; her milk contained one million bacteria to the cubic centimeter.

Milkers—These should be personally clean and of cleanly habits. The hands should be washed before milking, and should not be wet during the act with milk or otherwise. A clean garment should be put on and worn during milking, and used for no other purpose. At first our dairymen here thought this unnecessary, a foolish, fashionable fad of the board of health, and during our earlier months and trials I have seen a milker so bespattered with urine, dung, and slush that you could hardly find a clean spot on him as large as your hand.

Utensils.—These must of necessity be kept scrupulously clean by washing, sterilizing, and proper drying and airing. Special care is necessary with aerator cans, milk-pails, and bottles; all these should be washed with boiling water, then steamed and rinsed.

Example: With ordinary milk-pail and strainer, the bacterial count was 80,000; with sterilized pail and strainer, the same day, in the same barn, and with the same cows, 5,000 to the cubic centimeter were counted.

Cooling, Handling, and Transportation.—The next most important factor in the production of uncontaminated milk is immediate and rapid cooling. If no bacteria found their way into milk, it would remain unchanged indefinitely, except for the action of the enzymes which are natural to all milk. Some bacteria are bound to find their way into milk, but this should not exceed 2,000 to the cubic centimeter at the time of milking. After this the whole future condition of the milk depends to a large extent upon its handling during the first hour. A temperature of 45° very largely inhibits the growth of bacteria, and the sooner milk is brought below this point the better. It was found by the New York commission that where the milk was brought below 45° within forty-five minutes, a low bacterial count always resulted, other conditions being right. In an experiment made July 25 by the commission, tests were made of milk collected from clean cows in a clean barn; the average count from the pail was 7,000. It was then cooled not lower than 60° Fahr. by a slow process, and after two hours it was still standing at 60°, when a bacterial count gave 89,000. Five days later the milk, under apparently similar conditions, was cooled down to 45° within ten minutes from milking, and then showed a count of only 12,000. This was, of course, far too many. Ice is an absolute necessity for the proper handling and transportation of dairy milk in the hot summer months. First, it should be aerated inside of aerator, to be filled with cracked ice and water, which not only robs the milk of the animal odor, but immediately reduces the temperature below 60° Fahr.

The Use of Ice.—The milk-cans should be placed in a tank or trough surrounded by iced water until such time as desired for shipment. In transporting milk to New York, Philadelphia, Boston, or other large cities from long distances, iced jackets are placed about the cans. In this way the product reaches the cities in excellent condition, sometimes twenty-four, or thirty-six hours after milking. Taken then, clean, pure milk, with the lowest possible bacterial count, with proper cooling and handling, it can be kept almost indefinitely.

At the Paris Exposition, in 1900, there was an exhibit of American dairy products, in care of Major H. E. Alvord, chief of the dairy division of the United States department of agriculture. Among the articles exhibited were fresh milk and cream in bottles shipped regularly every two or three weeks from farms in Illinois, New York, and New Jersey. The report states "that foreign visitors and expert milk dealers, on the jury, were hard to convince that nothing but cleanliness and proper cooling were used to preserve these products. When finally satisfied as to the honesty of these exhibits, all were promptly awarded gold medals. The French exhibits of natural milk and cream bore a striking contrast to those of the United States at the July show, for there was not a single one of these local exhibits which was fit to use the day after reaching the grounds. They were all sour on the second or third day. But there were the natural products from America, just as they would be delivered to consumers in New York and Chicago, still perfectly sweet, a fortnight after being bottled, and after a summer journey of over 3,000 miles."

Milk Supply in Relation to Infectious Diseases.—Now we come to that part of our subject which most directly interests and concerns us as practitioners of medicine. We are no longer wandering in the realm of mysticism and doubt concerning the relation of milk to infectious diseases. The records are too numerous and conclusive for contradiction. We possess evidence now gained through experience and the most painstaking investigations as to the dissemination of the virus of scarlet fever, typhoid, diphtheria, and other diseased actions which can in no way be refuted. Numerous instances and records of such epidemics are at hand in which the spread of infection was definitely traced to the dairy and its surroundings. Kober has found that a very large proportion of the epidemics of scarlet fever, typhoid, and diphtheria come from dairies or are associated, at least, with disease at headquarters of milk products. In 195 epidemics of typhoid there was evidence in 148 of disease having prevailed at the farm or dairy. In a proportion of cases infection probably reached the milk by the water that was used in washing the utensils. In 99 epidemics of scarlet fever the disease prevailed in 68 instances either at the dairy or milk-farm; in six instances persons connected with the dairy either lodged in or visited infected houses. In two instances the infection was conveyed by infected bottles or milk-cans. In seventeen it was conveyed by persons connected with the milk business while suffering or recovering from the disease. Notable among other outbreaks we may mention 95 described and tabulated by Hart, of England, of which 48 were typhoid fever, 32 scarlet fever, and 15 diphtheria; also 90 tabulated by Freeman, of this country, of which 53 were typhoid fever, 26 scarlet fever, and 11 diphtheria. Still more confirmation comes from the records of the Board of Health of Buffalo, which is both interesting and convincing. There the seeds of infection were brought through the contamination of the milk supply from a remote center. It was observed that a group of scarlet fever cases existed in such association that it was apparent they all depended on a like source of infection. An investigation was instituted, which revealed the fact that 57 children, of 26 separate and distinct families, had succumbed to scarlet fever, all of whom had procured their milk from the same milkman, whose milk-houses, equipments, and health of family were all scrutinized, with the result of finding two cases in his immediate household. As nothing could be discovered of an unsanitary or causative nature with his own outfit, environment, and mode of handling, the inquiry was further carried to the source of milk production, the dairy farm, with the sequence of detecting two cases of scarlet fever in the desquamating period, aged seven and nineteen, respectively. The fact that the latter still had large flakes of cuticule peeling from his extremities must show that 57 cases of scarlatinal misfortune followed, for he, before being fully restored, being ignorant of the danger incurred, did the milking, washed the cans, and transported the milk to the depot for shipment, to be received and distributed to the innocent and unsuspicious consumers by the city milk dealer. Here, then, is a practical demonstration of the importance of individual dairy inspection. Happily, the wave of this epidemic was equally abrupt following the discontinuance of the mischievous product.

This was the first recognized outbreak of scarlet fever caused by a contagious poison emanating from a doubtful milk supply. A little later the records showed that nineteen cases of typhoid fever had developed with wonderful rapidity in families served by a milkman living in a sparsely-settled section of the city. The health department immediately instituted an investigation, which showed the startling result that the wife of the milkman, surrounded with unfavorable conditions, was ill with fever, but on the road to recovery. She was still being nursed and cared for by the husband, who was handling the milk. He washed the cans with the water procured from an old cistern that had, during the preceding year, been the object of several sanitary complaints. Another factor adding to the danger was the fact that the patient was cooped up in a little, stuffy room adjoining the kitchen, also having indirect communication with the milk-room. The cistern was abandoned, the dairy and premises put in a sanitary condition, with the result that there was no further spread of the disease and no further cases occurring in this route.

On Aug. 21, 1895, the health department discovered eighteen cases of typhoid fever intimately associated with the milk route of a dairyman living in the outskirts of the city. Examination revealed a condition about the premises very unsanitary, with bady-constructed, ill-ventilated, unclean milk-house, a condition most favorable for the multiplication of the typhoid bacillus. The special interest connected with these cases was that the wife of an employee had propagated the infection that contaminated the milk, through the agency of her husband, who, at night, not only acted as nurse, but fulfilled all the other necessary household duties, and who, during the day, handled and delivered the milk to his confiding consumers without changing his clothes for days, or taking any precaution whatever. The wife was moved to the hospital, all surroundings put in a sanitary condition, and just nine days after the discovery of the first no further cases developed.

Again, on March 9, 1896, fourteen cases of typhoid fever were found on the route of a milkman living in the western portion of the city. It was also found that the milk-room was in the rear of the first floor of the building, which he occupied. Several months before, a case of typhoid developed on the floor above, and ran its full course. These cases were thought to have been induced by unsanitary surroundings, and for like reasons remained active until finding expression in the dairyman's route. The epidemic quickly subsided by suppression of the milk, cleansing, and disinfection.

The health officer of Los Angeles, Cal., reports the following during the year just past: "In May of this year a Los Angeles physician attended a case of typhoid fever at a neighboring dairy. The records of the health department do not show that the case was reported. By this criminal carelessness, on the part of the physician, the milk became infected, and fifteen other cases of typhoid occurred among the consumers of the milk from this one dairy. The most deplorable part of the negligence was that three deaths resulted therefrom." Thus numbers of epidemics or individual cases might be multiplied without limit. I have brought these to your attention as of special interest and to fully demonstrate the possible contamination of milk or transmission of infectious diseases by the venders of the same.

Cause of Epidemics—Many epidemics of scarlet fever and diphtheria in Great Britain have been attributed to a milk supply from animals suffering with local affections of the teats and udder. That opinion has been confirmed by Dr. Klein in the examination of cows at Hendern. Dr. Klein found certain micrococci in the diseased tissues and organs of these cows and in the discharge of their udders, and succeeded in growing these in a variety of culture media. Inoculation of calves with this material produced a disease having unmistakable affinities both with the Hendern disease and human scarlatina. He found this microbe to inhabit the tissues and organs both of the human scarlatina patient and of the Hendern cow. He declared that we need no longer hesitate to call it the "micrococcus scarlatina."

In my own mind, I have for some time been thoroughly convinced that in a certain class of very severe and long-continued cases of enterocolitis in children which yield very slowly, or not at all to remedies, they are caused by a specific septic infection, transmitted through the medium of milk; and I am pleased to have found a much abler authority which has confirmed this opinion. Professor Huseman reports an epidemic of gastro-enteritis which prevailed in Christiania and within three weeks affected over 6,000 persons, but sparing infants at the breast. He concludes from his observations and the smaller epidemics which preceded the extensive outbreak, together with the fact that the bacteriological examination at Christiania revealed a similar organism, that the germ of "infectious enteritis" may be conveyed in milk.

With this mass of evidence before us, and also the recognition of the fact that every community has an interest in the health and well-being of its members, it becomes absolutely necessary, in order to obtain practical results, whether in the health boards or milk commissioners, that there be concert of action, universal care, vigilance, and perseverance among both laity and the profession as a prerequisite to prevent the occurrence of epidemics.

THE SUBARACHNOID INJECTION OF COCAIN.

By A. J. Pedlar, M. D.

Read before San Joaquin Valley Medical Society, March, 1903.

It is now nearly eighteen years since Corning first called attention to the general analgesic effect of cocain when injected into the spinal canal. More than eight years have passed since he gave a more graphic and detailed account of the procedure, in his book on "Pain." During the last five years the profession have given it a considerable trial, both in Europe and America. While employed mostly by surgeons, it has been used by not a few obstetricians. With the heroic enthusiasm so characteristic of their scientific countrymen, Bier[1] and Engleman tried the injection into their own spinal canals. In France, Guinard[2] and Tuffier have endorsed spinal anesthesia, each defending his position by a large number of reported cases. By his prominence in furthering its use, Tuffier has, probably, done more than any other European toward establishing the procedure. He has become a conspicuous mark for the shafts of the opposition, both at home and abroad. A number of writers[3] during the year 1900 referred to fatal cases as of frequent occurrence in Tuffier's clinic. As late, however, as April 24, 1901, Tuffier[4] stated: "There has not been reported so far a single death. All cases so far cited were from complications after operation." Two months later this statement was confirmed by the Paris correspondent of the New York "Medical Record."[5] Among the large number of Americans who have given spinal anesthesia a fair trial, Marx,[6] of New York, in obstetrics, and Morton, of San Francisco, in surgery, are both prominent. Both have given their results to the profession, and both warmly approve the operation. Morton,[7] an honorary member of this society, has published his series of 673 cases, with but one fatality, and that not clearly chargeable to the cocain. In a recent conversation, he informed me that he had now used the subarachnoid injection of cocain nearly one thousand times, with but the one fatality. While we can not all have such a wide field for observation, we can add to what is already known by recording even our limited experiences. This shall be my reason for reporting the twenty-nine cases in which we have resorted to spinal anesthesia at the Fresno County Hospital during my service. The cases comprised the following: Toe amputation, 1; leg amputations, 2; thigh amputations, 2; arm amputation, 1; opening lumbar abscess, 4; repair of lacerated tongue, 5 sutures, 1; hemorrhoids, excision, 6; suturing extensive lacerations, foot, scalp, 2; curetting inguinal bubo, 1; operation for radical cure of hernia, 2; removal of fragments of ischium, 1;

empyema, 1; curetting necrosed tibia, 1; examination of injured thigh, 1; removal of tonsils and cervical glands for epithelioma, 1; obstetrics, 1; opening and draining prostatic abscess, 1.

In one case I had a complete failure. This was due, I believe, to my inadvertently partially withdrawing the needle after having positively entered the canal. The cocain was delivered into the tissues, not into the canal. On a previous occasion the injection was entirely successful on this same patient. In one other case I had a partial failure, due to too weak a solution, less than 1 per cent. In the remaining cases the average time intervening between the injection and the analgesia was eight minutes. Analgesia of the tongue was complete in twelve minutes after the injection of twenty minims. Nausea was present in three cases, and slight vomiting ensued. Sweating occurred in three cases. Two had high temperature, and one had severe headache. This last-mentioned case sat up during the operation, and walked from the operating-room to his bed. While many feel perfectly able to walk to their beds after the operation, I think it should not be permitted. In my later cases I have had the patient prepared as for chloroform anesthesia, and ten minutes before injecting the cocain I give, hypodermically, morphin and atropin. Since taking these precautions I have rarely seen any unpleasant effects follow the intraspinal injection.

The danger in this procedure is limited to sepsis from faulty technic and to poisoning due to idiosyncrasy or impure cocain. Sepsis can be eliminated by careful preparation of the site of injection, the instruments, and the operator's hands. The preparation should be as thorough as for a laparatomy, and along the same lines. I use an all-glass syringe, a steel needle 8½ cm. in length, and anesthetize the skin with ethyl chlorid before inserting the needle. When the cerebrospinal fluid appears at the outer end of the needle, the injection is made with deliberation. To the haste of some operators, I believe some of the unpleasant effects are due. The injection consists of ten to twenty-five minims of a two per cent solution of sterile cocain hydrochlorate in sterile water at a temperature approximating 100° Fahr. The point of injection may be between any of the lumbar vertebræ, and the patient may be in either a sitting or reclining posture when the puncture is made. Some operators dissolve the cocain in the syringe after allowing the cerebrospinal fluid to fill the barrel. Others use normal saline soltion as a solvent, but, to be successful, we must, first of all, use cocain, pure and sterile. I have found it very convenient to use the drug as selected and sterilized by Dr. W. C. Riley,[8] of San Francisco. I believe his preparation efficient and safe. It will keep indefinitely, and is easily made ready for use anywhere. After withdrawing the needle, the puncture is covered with cotton and collodion.

It is hard to account for the adverse reports of some writers, except upon the ground of wilful unfairness or grossly-faulty technique. This remark certainly applies to the statements of Mohr,[9] who recently presented a rather elaborate study of the subject. He maintains that "anesthesia is limited to the lower extremities, is not of sufficient duration, frequently fails altogether, and is fatal once in every 200 cases." These claims have been so often disproven that they can not be seriously considered.

Based upon the reports which I have been able to compare, and upon personal experience at the County Hospital, my opinion is that spinal anesthesia is safely applicable to a wide range of cases. For nervous, excitable adults, and for children generally, I believe the operation undesirable. For psychological and esthetic reasons, I am not partial to the procedure in cases of abdominal section. In nearly every operation for hemorrhoids by excision it seems to be all that can be desired. The relaxation of the sphincter, and the ready cooperation of the patient, if called upon, are of no small assistance in maintaining an open field of operation; and, oblivious to all painful sensation, the patient smiles while ligature, knife, or cautery does its work.

In cases requiring careful examination to determine the presence or absence of luxation of bone, the spinal injection of cocain is often of the highest value. It produces quite sufficient muscular relaxation, and leaves the patient free to cooperate by assuming desirable positions and executing indicated motion of the injured member. The aged, as well as those afflicted with severe cardiac or renal disease, do very well under spinal anesthesia.

Following the meeting of the International Medical Congress there was, perhaps, an unfortunate rush to try the newly-exploited innovation in the realm of anesthesia. It is not surprising that failures were then common and results disappointing. In the light of what has been now done and recorded, however, there is no longer room to question the positive value and permanent recognition of this method of securing general analgesia. Those who have used it and discredited it, will return to it in the near future; but the present generation is not likely to see its use universally approved. Among the older members of the profession, and by some noted for their dogmatic individuality, the procedure will remain condemned without a trial. Writing recently from London, Professor Senn[10] says of a noted surgeon: "He has never used spinal anesthesia, and is averse to the procedure, as he thinks it more dangerous than anesthesia by inhalation." Of Professor Berg, of Sweden, Senn[11] says: "He regards spinal anesthesia with distrust, and has never given it a trial." A few "high priests" of surgery may refuse to be convinced concerning this, as did some "patriarchs" in medicine refuse recognition to the discovery of Jenner, but they can not long withstand the tide of recorded demonstration.

Fresno, Cal.

REFERENCES

1. Muenchener Med. Wochenschrift, Sept. 4th, Oct. 30th, 1900.
2. Presse Medicale, Oct. 29th, 1902.
3. Grandin Med. Record, Nov. 10, 1900.
4. Presse Medicale, Apr. 24th, 1901.
5. Correspondence Med. Record, June 29th, 1901.
6. Phila. Med. Journal, Nov. 3d, 1900.
7. Journal Am. Med. Ass., Nov. 8th, 1902.
8. Medical Record, Aug. 10th, 1901.
9. Medicinische Wochenschrift, Nos. 3, 4-5, 1902.
10. American Medicine, Nov. 8th, 1902.
11. American Medicine, Nov. 15th, 1902.

IRITIS ITS SYMPTOMS AND TREATMENT.

By D. H. Trowbridge, M. D., Fresno.

Read before San Joaquin Valley Medical Society, Fresno, March, 1903.

I have selected this subject not with the idea of adding anything new to the knowledge of this disease already at hand, but I find quite a number of cases of iritis that come to me have been treated as an acute conjunctivitis or as some other simple disease of the eye. Now, iritis is not a simple and harmless inflammation, and if left to itself or improperly treated, will often result in serious damage to the eye. On this account I thought a paper on this subject might possibly be of some benefit to this society, and with this aim I shall be pleased if I can make the subject any clearer to any one.

Under the general term iritis are included the various types of inflammation of the iris, which may be, first, idiopathic; second, secondary to disease or disorders in other portions of the body or of disease in the general constitution; and, third, traumatic.

As you all know, the iris is that portion of the eye which lies between the aqueous humor in front and the lens and vitreous behind, and contains the opening called the pupil. It lies in contact with the anterior surface of the lens when contracted, but when the pupil is widely dilated, it is drawn away from the surface of the lens. It is intimately connected with the ciliary body.

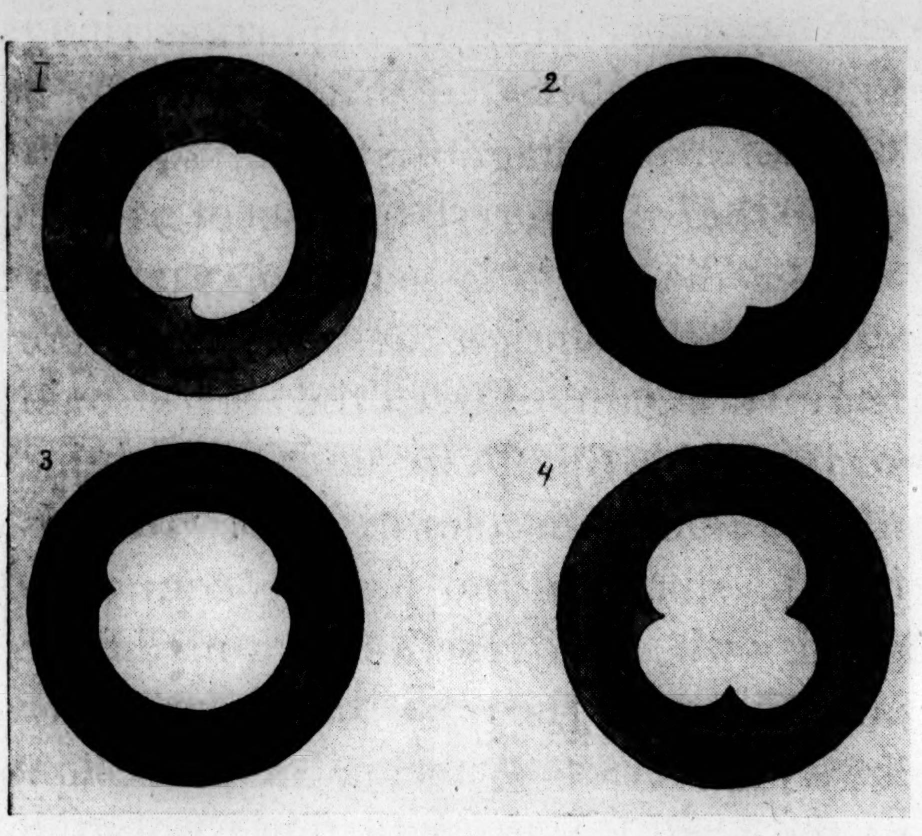
The symptoms of iritis are: First, change in the color of the iris. When a patient with an inflamed eye first comes to you suffering from iritis, if you will note carefully you will see that the color of the iris in the affected eye is different from that of the healthy one. It is usually of a brownish tint, and seems to lack the luster of the healthy iris. This is almost always an important symptom. Second, the inflammation or redness of the eye affected with iritis is of a pink shade, and seems to be deeper or subjunctival, and is called the "Circum Corneal Congestion;" it is of a pinkish shade, and the vessels are not distended so as to note the different vessels in a marked degree, but simply to produce a perfectly-blended shade of pink. Third, mycosis, or contraction of the pupil. This is a very important sign, for contraction of the pupil is nearly always present in this disease, and not usually in many other inflammatory diseases of the eye. It is especially important, in that it serves as an almost certain diagnostic sign by which we can differentiate iritis from glaucoma. Fourth, posteria senechia or an attachment of the pupillary border of the iris to the anterior surface of the lens, is one of the most certain symptoms in the diagnosis of iritis, so that when you are in doubt as to whether you are dealing with iritis or simple conjunctivitis, if you will instil a couple of drops of one-grain solution of atropin, it will make the diagnosis easy, as the pupil dilates very slowly if iritis is present, and likely will show some adhesions. If it is not iritis, it will dilate quickly and widely. If adhesions are present, you will find the outline of the pupil to be irregular, certain portions of the pupillary margin of the iris being held back by a tongue-shaped projection of the iris where it is attached to the lens capsule. The attachments may vary in size, firmness, and number, being very narrow and thread-like, or broad and dense. There may be only one, or many, thus making the pupil as it dilates of different forms, according to the number and location of the adhesions. There are, also, changes in the cornea, due to deposits upon its posterior surface. The aqueous humor may be turbid, due to inflammatory deposits, or pus or blood poured into it. In addition to the symptoms already outlined, there are subjective symptoms which are also peculiar to iritis. First of these is pain. This is usually severe, situated, first, in the eyeball at the margin of the cornea, and is called the ciliary pain; and, secondly, in the brow and temples. This brow pain I have found to be particularly of importance in diagnosis; it is nearly always present in iritis. This same brow pain I have seen taken for neuralgia, and treated as such. It is needless to say that this is a grave mistake, for valuable time is being lost, and adhesions are apt to form, owing to the pupil being left contracted and in contact with the lens. It may also be a symptom of corneal ulcers. Second, the disturbances of the vision.

This may be great or little, according to the amount of cloudiness which has occurred in the media. A very great impairment to the vision denotes an extension of the disease to the ciliary body or deeper structures of the eye. Photophobia, or dread of light, is present to a considerable degree usually; in some cases, though, almost absent, while others complain bitterly of any light, and have to be kept in a dark room. Fever and depression, accompanied by vomiting, may occasionally be experienced by the patient, but, as a rule, the patient will hold a nearly normal temperature. The foregoing symptoms are usually sufficient for the purpose of diagnosis, but it is well to bear in mind the diseases that are most apt to be mistaken for iritis. Simple conjunctivitis is most apt to be mistaken for iritis, as the general appearance of the eye is much the same; but in simple conjunctivitis the vision is usually unimpaired, the pupil is unaffected, the iris is normal in color, it acts quickly and readily to the influence of a weak mydriatic, severe pain is not often present, tenderness of the eye is not marked, and there are no adhesions of the iris to the lens.

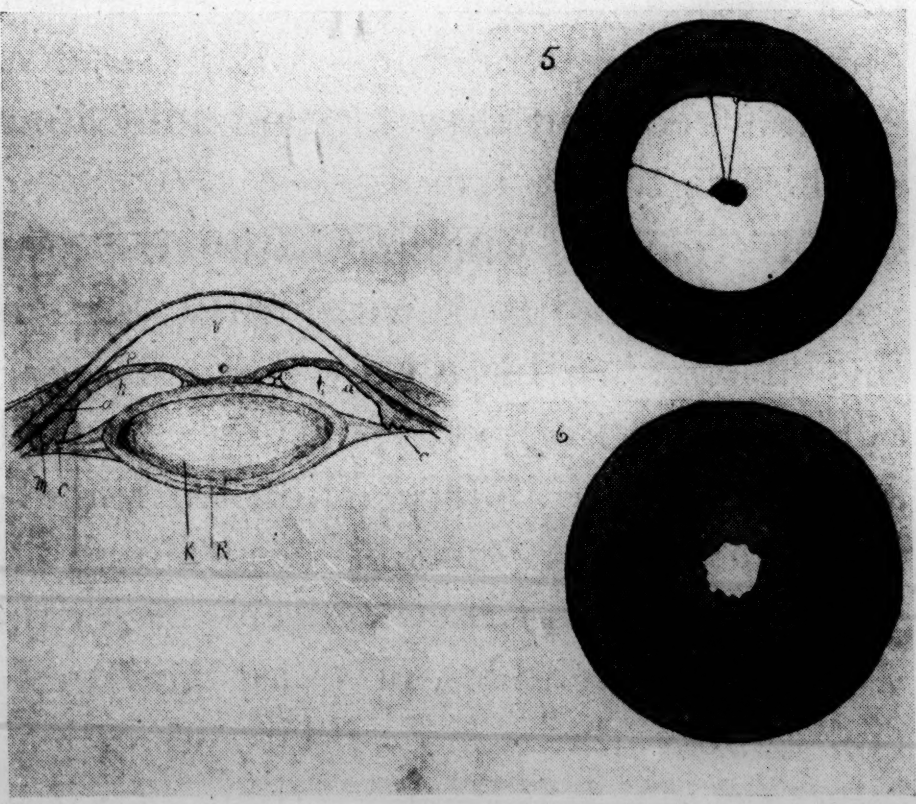
Phlyctenular conjunctivitis is also sometimes confused with iritis, but in this disease we have only a small focus of inflammation, or, possibly, several small areas of inflammation surrounding the cornea, usually containing a small ulcer in the center. Scleritis somewhat resembles in color and general aspect the zone of circumcorneal injection which is characteristic of iritis, but in scleritis we have no adhesions to the lens. Acute glaucoma often resembles acute iritis, but in glaucoma the pupil is dilated, instead of being contracted, and the redness is caused by larger blood-vessels, not the fine pink tint of iritis. In glaucoma, also, the field of vision is very much contracted, whereas in iritis we have no contraction of the field. This should always be carefully noted, for atropin, which is indicated in iritis, is absolutely contraindicated in glaucoma, and its use might mean the loss of an eye.

Now, there are two important things to be remembered in iritis: first, to be sure of your diagnosis; and, secondly, place the iris at rest by use of atropin. As the diagnosis is very important, we will merely mention the most important features again: First, the brow pain; second, the fine "circumcorneal injection;" third, discoloration of the iris; fourth, sluggish and usually contracted pupil; fifth, slow reaction to a mydriatic; and, sixth, if the case has gone a few days, posterior synechia or adhesions to the lens. Now, with these points in mind, it seems to me that we should always be able to tell the difference between a case of iritis and the forms of simple inflammation of the eye. The disease runs a course of from two to three weeks to as many months. Happily, under proper treatment it usually yields readily, and after three weeks we have as normal and as perfect an eye as ever. Occasionally we have the iris bound down permanently to the lens, which leaves us an irregular pupil for life, but even with this we may have perfect vision. These adhesions, however, are apt to cause recurrent attacks of iritis. Should the iris become absolutely agglutinated to the lens around the entire pupil, a condition called occlusion, this would produce a glaucomatous condition of the eye, which, if left to itself, would produce absolute loss of sight. Should occlusion occur, blindness could only be prevented by an iridectomy.

The causes of iritis are, as a rule, not many. About 60 per cent of all cases are due to syphilis. Rheumatism is given credit for a large number of cases; gout, also, produces an occasional case. Gonorrhea rarely causes an attack of iritis. It is supposed to be caused by the influence of the gonococcci on the iris. It may relapse with each new case of gonorrhea. Iritis, is also caused by corneal ulcer, especially if the ulcer is deep and the case severe It also may be a complication in most of the febrile diseases, such as typhoid fever, pneumonia, scarlet fever, etc. However, syphilis is the cause of from 40 to 60 per cent of all the cases of iritis. It is my custom when a case of which I am suspicious of iritis appears, to first ascertain whether or not the patient has ever suffered from syphilis; if he has, I am very sure my suspicions are correct. Iritis usually occurs in syphilitic cases between the second and ninth months, but in a case of untreated syphilis may appear at any time; and I find that most cases of syphilis have been very poorly treated, or not treated at all, due, not to the negligence or ignorance of the physician, but due to the fact that nine out of ten patients who have contracted a chancre will take treatment until the initial and secondary symptoms have disappeared, and then they think they know more than the physician, and, upon their own judgment, discontinue treatment. It is in this class of patients that we have our most severe cases of iritis.



Now, in the treatment of iritis, atropin is the sheet-anchor; in fact, atropin is to iritis what quinin is to malaria or mercury is to syphilis. It is the great anodyne of the eye. It is almost a specific. When a case of iritis appears in the office, it is my rule to make a careful examination, to be as sure as possible that my diagnosis is correct, and then to instil two drops of a four-grain solution of atropin into the eye, and then allow the patient to remain in the office twenty minutes to half an hour, after which time I again examine the eye, to be sure that I am getting dilation of the pupil. Should this not accomplish the result, I instil two drops of a solution of eight grains to the ounce. Should there still be a slowness of the dilation, I prescribe a solution of atropin of the latter strength, namely: Eight grains to the ounce, two drops of which are to be instilled every three or four hours, and at the same time hot fomentations to be kept up, at least twenty minutes out of every two hours. I find these hot fomentations aid materially in producing dilation of the pupil and in breaking up adhesions to the lens, should any exist. Should this not, inside of twenty-four hours, accomplish considerable dilation of the



pupil, I increase the strength of the atropin to 12 or 15 grains to the ounce. When using these strong solutions, it is important to watch that you do not get a constitutional effect from the absorption of the atropin. I always instruct the patient from the beginning, when using the atropin drops, to hold the tear duct for a minute or two with the finger after each instillation; this prevents the solution from being carried into the nose and throat by the tears, and being absorbed. Should you get some constitutional effect, a little strong coffee may counteract that, so that you can continue your drops; but should you get a marked effect, the atropin must be discontinued for a while. As soon as these strong solutions break loose the adhesions to the lens and produce mydriasis, they must be discontinued, and a weaker solution, say, four or eight grains to the ounce, used continuously every three to five hours. Hot fomentations should be continued, as well as the atropin, twenty or thirty minutes every two or three hours throughout the course of the disease. You will find that, as a rule, after a few instillations of the atropin and a few applications of the hot fomentations, the pain has been materially relieved, but in some cases the pain continues to be so severe as to require the administration of codein, or even morphin, for the first few days. Cocain, combined with atropin, sometimes seems to increase the effect of the atropin on the iris. Now, in syphilitic iritis, of course, constitutional treatment should be used energetically in conjunction with the foregoing. If it is in the secondary stage, I prefer inunctions of mercury, rubbing in forty grains of the mercurial ointment once a day. It is better to have this done by a regular masseur, if it is possible to obtain the services of one, and it must be rubbed in thoroughly for half an hour, at least. In the tertiary stages of syphilis, I would prescribe iodid of potassium in large doses three times a day, doses running from twenty to forty grains. This, of course, should be combined with the ordinary local treatment. Constitutional treatment, in either case, must be kept up vigorously, and the patient should, in my judgment, be warned to continue treatment, and, if possible, kept under observation for at least a couple of years afterwards, for recurrent attacks of syphilitic troubles certainly show us that the poison is in the system, and the patient will not be safe until he has been treated vigorously for at least twenty-four months. I frequently have patients suffering from some tertiary symptom, and, upon pressing them, they declare they were treated for three, four, or five months, until all local symptoms had subsided, and they were not encouraged to continue treatment. In my opinion, this is criminal negligence. If you were to make a specialty of the eye for a time, and see as many cases of blindness brought on by optic atrophy, besides other minor ailments, which have been the result of poorly-treated syphilis, I think that you would agree with me that we can not urge the patients too strongly to keep up this treatment for at least a period of two or three years. Now, aside from syphilitic iritis, all forms are treated practically the same. I do not think that it is necessary to make a close distinction between any of the other causes, for the treatment is practically the same, namely, atropin, either with or without being combined with cocain, and hot fomentations. If uric acid diathesis is suspected, add the alkalies. The patient should be, of course, confined in a dark room during the acute stages, and nutritious diet be given to keep up the strength, and pain relieved by some opiate; but allow me again to impress upon you the necessity of instilling some weak mydriatic into the eye of any case which comes into your office, and of which you are suspicious of iritis; by this method you can assure yourself whether or not the patient has iritis, and if he has, by getting an early start, you may render a severe attack a light one, and prevent his having adhesions to the lens, which, had you not begun your treatment early, would probably have become permanent.

Traumatic iritis is, of course, due to some injury to the eye, either accidental or follows an operation. As the symptoms and treatment are essentially the same as already given above, it is unnecessary except to merely mention it.

END RESULT FOUR YEARS AFTER A PUS JOINT AT THE KNEE.

By Harry M. Sherman, A. M., M. D., Professor of Surgery University of California; Surgeon to St. Luke's Hospital; Orthopedic Surgeon to the Children's Hospital, San Francisco.

Read before the California Academy of Medicine, Jan., 1903.

In July, 1898, an eleven-year old boy had an acute osteomyelitis of the femur in the popliteal region and a staphylococcus infection of the knee-joint. The condition developed after two slight superficial injuries to the knee, but both of these had occurred when the boy was physically fatigued, and the first pain and swelling came on within twenty-four hours of the second injury. He had the usual local and general symptom complex of his condition, and I saw him in the fourth day of his illness. He was sent to the hospital; the abscess of his osteomyelitis was opened, emptied, and plentifully douched with 1-1000 sublimate solution. It extended one-half the distance up the bone, and was at first packed with gauze. Later, tube drainage was substituted, and this drainage was kept up for twelve months, by which time a sequestrum had separated from the living bone, and was removed. The removal was of several fragments, which together represented the whole of the lower end of the diaphysis. The wound then nearly closed, but opened again a year after the first sequestrotomy; more necrotic bone was felt and removed, and in five months another piece came away, and then the wound definitely closed.

Now the knee, which is the interesting matter, was opened at the first operation by incisions on either side of the patella, and a joint full of synovia, pus, and fibrinous flakes was found. According to the method of Finney, of Johns Hopkins ("Johns Hopkins Hospital Bulletin," Nos. 54 and 55), the joint was washed with about a gallon of 1-1000 sublimate solution, and gauze drains put in. These were in for a few days only, and then were omitted from the dressing, and in a month the joint had closed and was becoming stiff, but it opened again and again, the last time being seven months after the operation. At this time much pus was discharged, and the knee did not close until a small piece of bone was discharged two months later; when it was healed, it was in a position of about 22° of flexion, and permitted of but little motion. This flexion had occurred in spite of the removable splints tending to keep it straight, and it increased to 37°, and here permitted about 10° of motion. I had expected a firm anchylosis, and wished for it as the best reasonable result to be obtained, but I wanted the knee extended, and so, eighteen months after the operation, under an anesthetic, extension was made with the use of Goldthwait's genuclast, and the boy put in a plaster-of-Paris splint, in a position of nearly full extension. This position was maintained, and the leg kept in splints for eleven months, and then, as anchylosis did not occur, the splint was left off, and the boy given the freedom of his leg. At this time I was much disappointed, and expected to have to do a resection to get firm union between the tibia and femur. But, curiously, motion began to increase, and an ampler range was gained, and the only thing I had to guard against was the loss of extension. This, however, did not occur, and the joint passed into the state you now see it in, with full extension and about 60° of flexion. It is so regularly the rule to get anchylosis after a pus joint that this exception seems to me worth noting, and there is one point to be made in comment on the treatment. There was no effort made to break up adhesions, and get and maintain motion. Such efforts are sure to count as traumatisms, as acts of violence on the articular tissues, which they resent, and which consequently result in more effusion and infiltration and thickening and more rigidity. The one manipulation I practiced was the extension of joint; but the extension was maintained, rest in the extended position was imposed, and I never made the slightest attempt to get flexion. Flexion came gradually, the joint cavity and synovial tissues being gradually enlarged and stretched to greater dimensions with use and no abuse. Once the boy tripped and flexed the knee past the usual point of limitation of motion, and, fortunately, he tore only some weak adhesions, and put no strain on normal structures, or he would have had some effusion and an acute synovitis, and just what one would expect him to have if he sprained a normal knee. If one could know just where the restraint of motion is due to a weak adhesion, it would be quite justifiable to force the motion, but this one can not know; and I find it safer, though slower, to go in patiently with use and passing motion within the limits of painless, or almost painless, motion, confident that the end result will be quite as good as if I practiced more strenuous methods.

IS SURGICAL TREATMENT TO BE THE ROUTINE TREATMENT IN BASEDOW'S DISEASE?

By W. Winterberg, M. D.

In discussing briefly the above question, it is not my intention to enter into any arguments for and against the different theories that have been advanced in order to explain the pathogeny of this puzzling disease further than to give them a casual mention in connection with the treatment indicated by their practical application. So far there is not one explanation of all those that have been offered satisfactory to the scrutinizing mind, and some of the best investigators express diametrically opposed views on the subject. Now, in the absence of any proof for the correctness of one theory or another, we have no scientific ground to build our therapeutic edifice on; the elaboration of a rational plan of treatment is not possible, and our resources for combating the disease are limited to a series of more or less empirical methods of treatment, of which, since the last decade, surgical measures have had quite a fair share of experimental tests in the hands of some prominent operators.

The one who has contributed more material in surgical experimentation than anybody else is Kocher, who lately has published an exhaustive article, in which he carefully reviews 93 cases of Basedow's Disease which came under his observation since 1883. He found some kind of an hereditary factor in most instances, either goiter or some nervous predisposition, and in all cases some enlargement of the thyroid gland. He operated on 59 cases out of these 93, and reports 44 cures, 8 markedly improved, 3 slightly improved, and 4 died. The results obtained by internal medication were inferior to those obtained by operations. The operations consisted of partial excision of the thyroid gland, or ligature of both thyroid arteries, or both combined; in 3 cases there was done a resection of the cervical sympathetic nerve, and the arteries ligated in addition. In no case was an operation performed during the stage of great psychical irritation or acceleration of pulse. Belasescue and Jounesco have limited their operative treatment of Basedow's Disease to the bilateral resection of the cervical sympathetic, and consider this the treatment of election in all cases of that affection. To support his contention, Belacescue reports as the result of his operations 63.8 per cent of permanent recoveries; 18.1 per cent improved, and 18.1 per cent of failures. J. L. Faure several years before was not so fortunate; out of 3 cases in which he performed a double sympathicotomy, he lost one patient, one came very near dying in an attack of syncope at the time the nerve was cut, and the last one showed some improvement after the operation. To the casual observer the above data may seem to be sufficient to prove that surgical interference is the correct treatment in Basedow's Disease, and yet in reality there is nothing further remote from truth than such a doctrine. No matter how many patients happened to get well after being operated on, or were found improved afterwards, you can not prove thereby that the improvement, if it really existed in all cases, was a necessary result of the operation. In Kocher's report we find that in no case was an operation performed during the stage of great psychical irritation or acceleration of pulse; besides, out of a total of 93 cases only 59 were operated on; so we see that Kocher carefully selected his cases for operation, and, furthermore, only operated when the more prominent nervous symptoms had subsided after proper non-surgical management. The natural inference which we can draw from these facts is that those 44 cases that got well after the operation would have done so likewise if they had not been operated on, but treated by the best known non-surgical methods. It is a well-known fact that the milder cases of Basedow's Disease get well by rest in bed and proper diet; if to these simple remedies some more energetic measures, such as hydrotherapy, electricity, and climatic changes are added, we find that even the most severe forms will get well, or at least be considerably improved, without surgical interference.

So much for the practical side of the question; now let us see what is the rationale for the removal of part of the thyroid. If it were an established fact that Basedow's Disease was caused by a change in the thyroid gland and its secretion, there would be a good theoretical reason for operative interference, if thereby the secretion of the gland could be made normal again; but up to date the question of the origin of the affection remains unsettled, and if it were settled in the affirmative, a partial resection of the gland could not, from a theoretical point of view, be expected to do much good, because the remainder of the gland would go on secreting the same material as before, and in increased quantity, in conformity with well-established physiological facts. Furthermore, what will you do with those cases of Basedow's Disease in which the goiter is only conspicuous by its absence, or so insignificant as to easily escape detection, while all other symptoms that are ever to be found in the disease may be present in the most severe form. Would it not be reasonable to suppose that something else must be necessary to produce all these complications, when there is no visible change in the thyroid at all, or when the enlargement is very trifling. Some time ago a patient with Basedow's Disease came under my observation who had a very slightly-enlarged thyroid, which very promptly shrunk back to its normal size; a few weeks later this same patient had profuse diarrhea, skin eruption, tremor, palpitations, and acceleration of pulse; his hair fell out; his muscles had wasted away within one week to such an extent that his otherwise normal weight of 160 pounds was reduced to about half; the exopthalmos was very prominent, and he vomited almost constantly, when I came to see him in the country, whither he had gone to recuperate. I had to transport him back to the city on a stretcher; he had no thyroid enlargement whatever, and got well without operation. Those cases in which the goiter as well as the exophthalmos are absent are by no means rare. The French call them the "formes frustes" of Basedow's Disease, because they have no longer the characteristic imprint of the disease, and they certainly prove that Basedow's Disease can exist without a change in the thyroid. If that be so, what then becomes of the science of that theory which claims that resection of the gland is the indicated treatment of Basedow's Disease? To avoid the answer to this vexed question, some surgeons have located the cause of the trouble somewhere else, and recommend and practice resection of both sympathetic nerves as the proper operation for Basedow's Disease. No we have two operations to choose between, and if brilliant statistics go for anything in influencing our choice, we ought to follow in the lead of Belacescue and Jonnesco, who claim 63 per cent of permanent cures, 18.1 per cent improved cases, and 18.1 per cent failures, without a single death. Their theory is that exophthalmos and tachycardia disappear after resection of the sympathetic, in consequence of paralysis of Mueller's muscle and abolition of the "nervus accelerans cordis." The shrinking of the thyroid is supposed to be due to the disconnection of the secretory nerves of the gland; the remaining symptoms are dependent upon cerebral anemia, and will disappear as soon as the operation cures the anemia. In secondary Basedow's Disease, the goiter is the causative agent; in primary Basedow's Disease, cerebral disorder, the sympathetic nerve is the connecting link between the original seat of the trouble and the other organs, and it is for the purpose of abolishing this connection that bilateral resection of the sympathetic nerve is necessary. The glaring weakness of such an argument is undeniable. Taking the first class of cases of secondary Basedow's Disease, resection of the sympathetic leaves the supposed cause absolutely intact; it only severs its connection with the brain, while the abnormal secretion of the thyroid gland, which is supposed to be the cause of the disease, goes on as before. In the primary form, if it were merely a question of cerebral anemia, that, of course, would be remedied by the operation for a certain length of time, but any other cerebral disorder would in nowise be influenced by it, as far as our present knowledge goes; besides, it is hardly conceivable that cerebral anemia could produce all those symptoms which belong to the disease, such as profuse diarrhea, the exanthema, loss of hair, muscular atrophy, etc. The report of numerous cures effected by this treatment does not prove anything at all as to its efficacy; the "post hoc, ergo propter hoc," is a fallacy in itself, if not corroborated by other evidence. History repeats itself, and we all know that the number of successfuly treated cases with any new remedy is never wanting. I only need to mention here the oxytuberculin treatment for pulmonary phthisis, which produced the most marvelous results for a certain time, until it finally was admitted to be a failure, even by its own inventor. After Sommerbrod had treated tens of thousands of cases of tuberculosis with creosote, and obtained a large proportion of cures and improvements, Gehrhard pronounces to the medical world that the medicinal treatment of tuberculosis has collapsed. Even the great Virchow had to live to see a part of his carefully and studiously built up pathological edifice demolished by the irresistible force of facts, which proved that some of his speculations and theories were wrong. To blindly follow the dictum of the master, and forbid discussion or criticism of his "lutos eyd," is not at all desirable in the interests of science and truth, and progress would certainly be considerably hampered by a "jurare in verba magistri" policy. Returning once more to Kocher's report, the only one that commands serious consideration, it is evident that those cases of his, in which internal medication was used with inferior results than those obtained by operation, can not have much weight in turning the scales, for there are very likely only few if any practitioners who would place their faith in medicines for the treatment of Basedow's Disease. On the other side, absolute rest, a well-regulated diet, good air, and hygienic surroundings, with possibly a change of climate, sea voyage, electricity, massage, and last, but not least, hydrotherapy, to which Winterniz, the master of hydrotherapeutics, has lately again called special attention, will make any operative treatment in the large majority of cases absolutely superfluous and unnecessary. But apart from all this there is another much weightier argument to be invoked against a generalization of the surgical treatment of Basedow's Disease, and that is the danger to life, which is considerable. B. Riedel, in his second edition of Pentzold a Stintzings Manual of 1898, page 81, makes the unqualified statement that resection of the thyroid gland in Basedow's Disease is free from danger, and shows thereby how careful one has to be in following blindly in the lead of even a Riedel, a surgeon of unquestionable ability and repute, and how much more so, if a far lesser authority wants to assume the role of the leader. Riedel's assertion is simply untenable, for the statistics show a rather high mortality after the operation, and even in the hands of a master operator in that particular branch, like Kocher, the mortality was still nearly 7 per cent, certainly a high rate when we consider that Basedow's Disease hardly ever causes the patient to die. Compilations of statistics from a number of other operators show a mortality of 16 per cent (Sorgo Centralbl f. d. grenzgel, etc., I 9, 1898), and in some others there appears a mortality of even 30 per cent. In resection of the cervical sympathetic for the treatment of Basedow's Disease, we are likewise confronted with a considerable death rate following the operation, which ranges between 10 and 15 per cent (Boissou, These de Paris, 1898, page 216); and if Belacescue and Jonnesco can keep on performing this operation without loss of life, they certainly can do better than others of an even higher surgical reputation than theirs, or they must be extremely lucky. Jonnesco indeed appears to be a real magician, inasmuch as he claims to have limited the sympathetic nerve resection to a simple removal of the superior cervical ganglion, a feat which has been declared an anatomical impossibility.

From the foregoing it follows that neither of the operative treatments of Basedow's Disease offers any better chances for a cure than the best recognized non-surgical methods of treatment; that there are no scientific facts at our disposal which could justify any operation on theoretical grounds, and that either operation is a far greater danger of life than the disease itself. The question, What is the proper treatment for Basedow's Disease? would, in my opinion, be best answered in this way: All cases in which there are no special indications for surgical interference ought to be treated by rest, diet, climatic changes, massage, hydrotherapy, and under certain conditions, some special symptomatic medication might be indicated. The cases in which the goiter is of such dimensions as to produce untoward symptoms to the patient, ought to be operated on, or in cases where there is exophthalmos of such a degree as to endanger the eye, resection of the sympathetic nerve ought to be performed. It is only in such cases that surgical interference should be resorted to, and the claim that Basedow's Disease is a surgical disease from the onset, the treatment of which should be left entirely to the operator, is simply preposterous. Surgery has of late years received a wonderful impetus, and it is not astonishing that a good many of us are being carried away by the "furor operandi," the zeal to swell the number of their operations, for they seem to be of the opinion that he who does most operations is the best surgeon, no matter whether there is an indication for an operation or not, or whether it will be to the welfare or the detriment of the patient. This is decidedly dangerous ground to step on, and a reaction will sooner or later be inevitable. Applying the knife to all kinds of diseases indiscriminately, without clear indications, is leading fast towards charlatanism, and there is only a short step between such ground and an appendicitis dinner.

PANCREATIC CALCULUS.

By L. W. Allen, M. D.

Resident Physician and Surgeon, St. Luke's Hospital.

Graaf, in 1667, first recorded the occurrence of stone in the pancreas. In 1883 Johnston collected 35 recorded cases, and in 1896 Giudiccandrea collected the notes of 50 cases. The calculi are gray or white, smooth or rough, and vary in size from fine gravel to a walnut. They are composed of phosphorus salts, carbon salts, magnesium carbonate, and organic matter. It is interesting to note that carbon salts are not found in the normal pancreatic secretion, so that the formation of calculi must be due to some change in the secretion. In all probability, this change may be caused in one of several different ways: First, it may occur in the pancreatic fluid already secreted (a) by a catarrhal condition of the pancreatic duct from infection from the common bile duct or intestines, or (b) from retention of secretions by an obstruction in the common duct. Yet it is worthy to note that ligation of Wirsung's duct has never yet produced pancreatic calculi. Second, it may occur from a change in the secreting cells, either (a) in the functionating power of the cells themselves, or (b) in the condition of the blood or blood-vessels supplying these cells.

The morbid anatomy of the pancreas accompanying calculi is a pancreatitis, usually of the interlobular type, with or without cyst formation. Sometimes abscesses develop from secondary infection. I could not find the history of a single case of pancreatic calculi without an accompanying pancreatitis.

With the exception of the occasional light attacks of gastro-intestinal disturbances, such as nausea, vomiting, and possibly diarrhea, not any of which are characteristic, the most important symptom in the early diagnosis of pancreatic calculus is pain, when considered as to its type and locality. The pain is sharp and paroxysmal, similar to biliary colic, from which it oftentimes can not be diagnosed. Especially is it like the pain in the deep epigastric area, near the median line, found in calculus of the common duct. Sometimes, however, the pain is referred to the left side and left scapula, or mid-scapular region, as was the condition in a patient recently under the care of Dr. Clark Burnham, at St. Luke's Hospital. In the interval between the paroxysms there often remains a dull, heavy pain over the epigastrium, sometimes to the right, at other times to the left, of the median line, becoming acute on deep pressure over the pancreas. Fat and undigested muscle fibers found in the stools in the early stages may be due to complete obstruction of Wirsung's duct, but is usually absent until the inflammation of the organ has seriously impaired its parenchyma. Then we must remember that an increase of fat and of undigested muscle fiber in the stools may be due to other causes, and so be of no absolute help in a diagnosis, even when present. A much more positive sign of obstruction in the pancreatic duct is to find a deficient amount of fatty acids and fatty soaps. Investigation shows that three-fourths of the fat found in the feces is composed of fatty acids and soaps. This is true also when jaundice is present, but when a diminished amount of pancreatic juice reaches the intestines, the proportion is reduced to about one-third. If the inflammation is of the interlobular type, sugar may not appear in the urine until very late, as was the case with Dr. Burnham's patient. Jaundice may be present at times, but is more often absent. It is in no way characteristic. Loss of flesh and strength develop with the prolonged presence of pancreatic calculi, but do not enter into the early diagnosis. Great destruction of the gland may occur without any unusual rise of temperature or leucocytosis.

The gastro-intestinal indigestion and the jaundice being in no wise peculiar to this disease alone, the fat and undigested muscle fiber, mellituria, loss of flesh and strength usually appearing late in the disease, we are left with the character of the pain and the location of the tenderness upon which to make an early diagnosis. It must be admitted that this is a very limited basis upon which to determine the necessity of surgical intervention, and that it will seldom be allowed until there are some confirming symptoms present, notwithstanding these confirming symptoms will be evidence of the destruction of the gland itself. Nevertheless, our aim should always be for an early diagnosis and this will depend upon the character of the pain—colicky, calculi-like, and its location, in the mid-epigastric region. It may radiate either to the left, or to the right, or straight through to the back and up into the left shoulder, or between the shoulders. The patient, who was under Dr. Burnham's care in the hospital, and upon whom we operated, opening two pancreatic cysts, in which two calculi were found, and from whom afterwards the specimen was taken which I have brought to exhibit this evening, at times, besides her epigastric trouble, complained of great pain and most severe tenderness over the left lumbar region, anteriorly simulating a perinephritic abscess, but on autopsy she was found to have no left kidney, the pain there evidently being due to the pancreas. It must be admitted, on the other hand, that it may be impossible to differentiate a pancreatic from a biliary colic. In the later stages, loss of flesh and strength, with glycosuria from concomitant disease of the pancreas, may make the diagnosis easier. Seldom is the diagnosis confirmed by finding the characteristic stones in the stools, although in these few cases in which it has been confirmed during life, stones were found in the majority of them. Kinnicutt recently reports that there are only seven cases on record in which the diagnosis was made, or such a pathological process was suspected during life. Of these seven, in four stones were found in the stools or through fistulous tracts. One of these was his own, which had been previously diagnosed by Dr. McMonagle, of this city. Two others were accompanied by diabetes; the other, after operation for a supposed cholelithiasis, by exclusion. These seven are out of a total of forty-five or fifty cases. It is to be hoped that the future will present a better record of diagnosis than the past.

Pancreatic calculi may be expelled into the intestine, or, by perforation, into the stomach, followed by a restoration of the individual to health. But usually they remain long enough to produce a chronic pancreatitis, added to which may be a cystic or abscess formation. In those cases in which they are due to a preexisting pancreatitis, this condition persists, resulting in the formation of more stones, and finally taking the life of the individual.

Under the head of treatment, relief of pain by morphin, ether, or chloroform, and the external application of heat, are indicated, as in biliary colic. Subcutaneous injection of pilocarpin is said to be helpful in the expulsion of a pancreatic calculus. As to diet: Give nothing by mouth for a day or two, and then only those foods which are least irritating to the duodenum,—those which require the least from the pancreas for their digestion. No fats, and but little farinaceous food. Give pancreas and pancreatin by mouth. If a calculus can be diagnosed, or is strongly suspected, surgical relief is indicated, and it is hoped that it may be made early, to save, possibly, the pancreas from destruction, especially in those cases which may be due primarily to infection. In those due to a previous pancreatitis, the relief may be permanent, as there are now a number of cases of chronic pancreatitis on record cured by cholecystectomy or cholecystenterostomy. To remove the calculus, the pancreas can be approached, either through the gastro-duodenal omentum, or, lifting up the greater omentum, through the meso-colon, or, in the case of a stone near the orifice of the pancreatic duct, through the duodenum, incising the ampulla of Vater. In all cases it is wise to drain temporarily the gall-bladder, preferably by a cholecystostomy, on the understanding that there is always a pancreatitis present.

REPORT OF A CASE OF TUBERCULOSIS OF THE CORNEA, IRIS, AND CILIARY BODY.

By Dr. A. Barkan.

Read before Cooper College Science Club, March 2, 1903.

About a month ago L. M. was brought by his mother to my office. His left eye presented a tubercular affection of such typical character that I and those who saw the case were much interested in it. The case was presented by Dr. Martin to the Society of San Francisco Oculists and Aurists.

The family history of the child is negative as far as syphilis and tuberculosis are concerned. The boy comes from very hardy stock. Ten months ago he had a fall, and struck on the left side of the head in the neighborhood of the left eye. There was considerable swelling and ecchymosis, but in a short time all evidence of the bruise passed away, and the child's eye seemed as well as ever before. The child's mother is quite sure that she made a careful examination of the eye often. It was only about three months ago that she first saw trouble appear in the eye. It became somewhat inflamed. There was a little redness of the conjunctiva present. This persisted, and soon afterwards the mother distinguished some little nodular bodies in the iris, which seemed to have developed rather rapidly within a day or two. She clearly observed some of the nodules developing and others passing away, but for about a month past no particular changes have occurred. There has been no systemic disturbances, as far as she could tell. Present status of left eye: Lids and surrounding tissues absolutely normal in appearance. No photophobia, lachrymation, no tenderness on pressure. The tension of the eye is normal. Palpebral conjunctiva normal. Ocular conjunctiva somewhat injected. Cornea shows several infiltrated spots about size of pin's diameter, of grayish color, clustered together toward the center of the cornea, situated well in the substance of the membrane. Cornea clear and normal in appearance in other parts. The iris shows a most characteristic pathological picture,—that of tubercular nodules cropping out from the stroma of the iris, tending towards the cornea, the picture wonderfully beautiful, as no other part of the body could probably show. The granulations were irregularly round, and encircled at their bases with the fine network of capillaries, which gave them their pinkish tinge. There were in all five or six of them, tending towards the rear surface of the cornea, and lessening the size of the anterior chamber. The iris itself was a little off color and rather thickened in its stroma, the pupil roundish, with two flat synechias tied down to the capsule of the lens. In the lower and outer quadrant the brown fibers of the iris were stretched and considerably bulged forward into the anterior chamber, due evidently to the formation of the large tubercular nodule in the ciliary process immediately behind. No symptoms of iritis proper. Pupil fairly black, though not reacting to light. The tubercular nodules lying in the clear aqueous humor reminded one of the beautiful formation sometimes seen in moss-agates. The lens seemed fairly clear, and some light could be gotten out from the fundus, but no details. The child could distinctly see large objects and distinguish between them. He was a bright, active little fellow, with light hair and rosy skin. One might pick him out of a crowd of children as a type of health. Examination of throat, nose, and ears showed them to be normal. There was no mistaking that enlarged glands were present at the anterior border of the sterno-cleido mastoid muscle on the left side. No swelling of the pre-auricular glands. The child was examined in Dr. Cheney's clinic, and both he and Dr. Hirschfelder declared all other parts of the body sound.

As far as diagnosis was concerned, there could be no question of the condition present,—that of an attenuated form of disseminated tubercular iritis, cyclitis, and corneitis. Possibly there were some nodules present in the choroid. This form has been classically described by Leber as an exceptionally mild form of tubercular iritis, in contradistinction to the virulent form of isolated tubercle, which always grows and destroys eye before life. As to differential diagnosis, the few possibilities of mistake lie in the direction of iritic gumma, sarcoma, iritis nodosa, as produced by the entrance of the hair of a peculiar caterpillar through the cornea into the iris, leukoæmia, and lepra. It was easy enough to exclude every one of these. As to the prognosis, it may be a surprise to some to know that quite a few cases have been observed of the attenuated form, where the nodules were absorbed and recovery of the eye took place, the patients living for many years afterward, possibly occasionally entirely recovering. This fact had to be well borne in mind in offering advice.

The mother's attention has been called to the possible necessity of removing the eyeball. Opinion, however, seems to be against such radical action unless the indications are very urgent, for cases have been repeatedly observed where the removal of the tubercular eye created new foci in the brain and in other parts of the body, or fanned slumbering foci up to life, with quite fatal result. There are but few authors who believe that tuberculosis of the eye, as illustrated by this case, is ever a primary affection. Certainly in our case we have good reason to believe that the neck glands were first affected, and possibly there are other hidden glands that were affected before that. Enucleation, then, as a prophylactic measure, is clearly out of question. Of other remedies that have been used in common with the treatment of tuberculosis of lungs, etc., the creasote and its preparations are advised. The proper general regime of local remedies, repeated paracentesis of the anterior chamber, introduction of small pellets of iodoform into the anterior chamber, massage with iodoform, have been advised, not with very brilliant results. Professor Koester, in Leyden, very recently introduced in an ingenious manner, with the hypodermic syringe, sterilized air into the anterior chamber, drawing off first aqueous humor. He argued that as cases of tubercular peritonitis, when the diseased tissues were exposed to the air, got well, the same curative effect might be produced in the eye. Although he is well satisfied with the course of the three cases thus far published, on reading them in detail, it is a question whether a cure was really affected. The question of injecting tuberculin was also agitated. Some European authors seem strongly to advise against it, though cures have been reported by others with tuberculin during the last few years.

The right eye on examination proved perfectly normal, having normal vision. Weighing the question carefully, the course which I advised and took seemed based rather on a favorable opinion as regards the possibility of spontaneous absorption of the tubercular nodules. Locally massage the eyeball with a 2 per cent iodoform salve, a constitutional diet, cold water applications, syrup of iodid of iron, and, according to our observation, within nearly a month's time the eye has certainly not grown worse, but, on the contrary, showed some improvement in a general way; it was less sensitive to light, almost white in color. If on further observation the local process should tend to increase, I would be inclined to try injection of dry air into the anterior chamber, and possibly tuberculin. On putting the question to the meeting as to the advisability of an excision of the glands evidently affected with tuberculosis, the almost general opinion was in the negative, a rather unfortunate expression of opinion, as the removal of the presumably primary focus, if it could be effected, might beneficially affect the organ secondarily affected. It will be an interesting matter to watch the further progress of the case, and to report on the same.

DEPARTMENTS

SURGERY AND ANATOMY.

By Wallace I. Terry, M. D., and F. Dudley Tait, M. D., San Francisco, Cal.

An Operation for the Radical Cure of Aneurism Based upon Arteriorrhaphy.—As far back as 1888, Rudolph Matas opened an aneurism of the brachial, which had persisted despite ligation of that vessel above and below the sac, and sutured, from within the sac, the orifices of the anastomotic vessels. Since then he has dealt with three other aneurisms by suture, and now presents the novel procedure in an extensive paper, which is well illustrated. Temporary hemostasis is secured in a limb by an Esmarch elastic constrictor, or, if high up or in the neck, by a protected clamp on the vessel. The aneurism is then opened and cleaned out, the orifices of vessels sutured with chromicized catgut or silk. The sac itself is then in part sutured from within, and finally closed, by bringing the skin down to it by means of ingeniously arranged sutures. When the sac is fusiform, with two openings into the sac, Matas has sutured the openings, closing the lumen of the artery. In the sacculated form, however, with but one opening, he was able to close the opening and maintain the continuity of the vessel lumen. The operation seems to be a distinct advance in the treatment of aneurisms, and merits further study. Many technical details are given, and the pathologic conditions well considered.—Annals of Surgery, February, 1903, page 161.

The Transplantation of Skin Flaps.—H. Widmann considers the subject and details the histories of twenty-nine cases operated upon by the so-called Krause method. The flaps are entirely detached, and include the skin, with a moderate amount of subcutaneous fat. He lays much emphasis upon aseptic operations, and upon the hands, instruments, sponges, etc., being dry. Of much importance is a careful preparation of the base upon which the flap is to be transplanted, especially the hemostasis, as any collection of blood or serum beneath the flap will raise it up and prevent union. A few silk sutures are employed to fasten the flap in place. For the first few days the flaps are bluish, but by the end of a week they should have a rosy tint, and this is more noticeable because the epidermis is thrown off. Such flaps, when successfully planted, possess a number of advantages over the Thiersch grafts, in that they are thicker, do not break down so easily under irritation, and are movable over the underlying structures. Of the twenty-nine reported cases, eleven were finger injuries, where the flaps, taken mostly from the arm, were used to cover stumps. In a number of cases the flaps were used to cover defects after excisions of tumors, lupus, or contracted scars. In three cases the result was a failure, and in two others a partial failure, but in the remainder satisfactory results were obtained.—Beitrage zur Klin. Chir., Band. 63, p. 579.

Report of Sixty Cases of Actinomycosis.—It has fallen to the lot of Von Baracz, of Lemberg, Austria, to have such a wide experience with human actinomycosis because of its frequency in Galicia. He does not operate on many cases now, but attempts to produce a wall of connective tissue about the diseased areas by injecting irritants, like tincture of iodin and 20 per cent solution of nitrate of silver. He effected a cure in nine cases by such treatment. In actinomycosis of the thoracic or abdominal organs, he advises the intravenous injection of colloid silver.—(Collargol.) Annals of Surgery, March, 1903.

Hygroma and Fibroma of the Tuber Ischii Bursae.—Friend finds that this is a rare condition, judging from the few cases that have been reported. He is able to add one case where both bursæ were affected, the patient being a butcher, and in the saddle more or less for twenty years. Removal of the bursæ was quite readily accomplished. One sac contained a number of rice bodies, while the other was filled with serous, bloody fluid. Friend believes that his cure is the first to be reported in America. (At the August meeting of the California Academy of Medicine, Dr. T. W. Huntington reported a similar case,* where the sac extended from the tuber ischii to the popliteal space, and was distended with a large quantity of bloody fluid.—W. I. T.)—Annals of Surgery, March, 1903.

OBSTETRICS AND GYNECOLOGY.

By Wallace A. Briggs, M. D., Sacramento, Cal., and George B. Somers, M. D., San Francisco.

Mortality in Pelvic Operations.—In an article on operations for pus in the pelvic cavity, Hunter Robb gives the following conclusions: (1) The mortality following operations for suppurative diseases of the tubes and ovaries can be kept under 5 per cent. (2) The death rate is largely influenced by (a) the virulence of the specific organisms present; (b) the individual resistance of the patient; (c) the time and manner of the carrying out of the operation. (3) The micro-organism most to be feared is streptococcus pyogenes, but it must be borne in mind that this organism varies considerably in virulence. (4) Abdominal drainage following operations for pus in the tubes and ovaries is seldom called for, as the organisms are generally dead. Drainage becomes necessary only when it has been found impossible to remove the suppurative structures, or where perforation of the bowel from the separation of adhesions is to be feared. Under these circumstances, the best route is by the vagina. (5) The employment of sterile salt solution for irrigating the pelvic cavity will satisfactorily remove the pus or its products, and the filling of the abdomen with salt solution will dilute and promote the rapid absorption of any inflammatory products that may be left behind. (6) The elevated position for twenty-four hours following the operation, with the abdomen filled with salt solution, tends to prevent the intestines and omentum from coming in contact with the immediate field of the operation, and, as a result, adhesions are not so likely to form between the viscera and the incised surfaces.—Jour. A. M. A., Jan. 17, 1903.

---

* Occidental Medical Times, Oct., 1902.

Surgery of Uterine Cancer.—(Gazetta degli Ospedali, Milan.) Bossi thinks that experience is demonstrating that irritation from any slight cause may transform a simple solution of continuity into a malignant growth. He therefore advises a plastic operation to cover such a lesion, and states that in 1,000 patients with various lesions of the uterus, treated by curettement and a plastic operation on the cervix, not a single case of cancer has occurred. On the other hand, 21 cases of cancer have developed in 1,000 patients, with similar uterine affection treated by curettement alone, without plastic operation.—Jour. Amer. Med. Assoc., Jan. 17, 1903.

The Perineum (Philadelphia Medical Journal).—Love comments on the evils following perineal injuries, and thinks they are usually inadequately treated. Many cases of perineal laceration may be due to faulty position of the mother during child-birth. It is the custom of the author to confine all primiparæ at least in the left lateral position, which makes the obstetrician master of the situation. Immediate repair, when possible, is insisted on, but he does not think it necessary to enforce the dorsal position or bind the knees together. He objects to the vaginal douche after operation, both on account of the possible risk to the sutured parts and for the danger of infection.—Jour. A. M. A., Jan. 17, 1903.

GENITO-URINARY DISEASES AND SYPHILIS.

By G. L. Eaton, M. D.

Some Sequelae of Syphilitic Infection.—In a recently published article on the above subject, Morton, of Sydney, states that when an individual presents himself with a genital abrasion, which in due course develops into an indurated chancre, it is impossible for any of us, even if we should profess to be specialists in venereal diseases, to picture in our mind's eye what may be expected to happen to the patient from so simple a looking sore in the next ten or twenty years of his or her life, that is, if the unfortunate individual manages to live so long and escape the many pitfalls we know are before them. He further states that in Australia the general practitioners have a better opportunity of following up their cases of syphilis than in the older countries, where, as in England, if an individual be infected, he attends the Lock Hospital; after a certain time they get a squint, and turn up at an eye hospital, or, if they have paralysis, they attend a general hospital or one for nervous diseases, or they may become incapacitated mentally and physically and be transferred to the Workhouse Infirmary and possibly afterwards to an asylum. He tabulates 50 syphilitics that have come under his professional observation. In the first place, he does not believe that persons who have been infected with syphilis live to a great age, 60 years being their widest limit; out of the 50 cases, 11 have died so far, and they were all under 55, except 2 medical men, who contracted finger chancres late in life. Another point to which he wishes to draw attention is that so many marriages where one or other of the parties have had syphilis are either sterile or the number of children born are very few. This is probably an extremely good thing for the community at large, and it is a pity that the same provision of nature does not apply to persons suffering from tuberculosis, where, in fact, the reverse appears to be the rule, and small families the exception. The syphilitic poison must in some way destroy, in the case of the male, the power of the sperm cell to fecundate, and in the case of a female the power of the ovum to germinate; 29 of the 50 cases tabulated were married, and in 50 per cent the unions have been absolutely sterile. In 4 others there has been only one child as the result of the marriage; that have had large families, not more than 3 to 4 at the most.—Australasian Medical Gazette, Dec. 20, 1902.

A New Method of Finding the Urethra in External Urethrotomy.—Gibron, in experimenting on the cadaver, has found that traction on the prostate downward and backward will render the deep urethra taut and easily recognizable, and will give a ready entrance into it in case of stricture where no guide can be introduced. He accomplishes this traction by transfixing the prostate laterally from the rectum by means of a hook. The traction is made by an assistant pulling on the hook, and the perineal incision is made down to the taut and easily-felt urethra.—Transactions New York Academy, Genito-Urinary Dept.

Vesical Appearance in Renal Suppuration.—Garceau, in the above-entitled article, calls attention to the appearance of the bladder in cases in which the upper urinary passages have become diseased. The evidence seen through the cystoscope are ulcers or inflamed areas surrounding, or in the neighborhood of, the urethral opening, on the side corresponding to the lesion in the kidney above. Thus in the author's list of 9 cases, 8 presented the lesion referred to.—Boston Medical Journal.

Geographical Distribution of Stone and Calculous Disorders.—Harrison draws attention to the well-known fact that the distribution of stone throughout the world is very varied and irregular. In Great Britain, with her colonies, there is abundant evidence of this. In some districts of England and the British Isles, as, for instance, in the Eastern countries, stone is common, while in other parts, amongst which may be included the whole of Ireland, it is remarkably rare. In the United States and Canada similar differences exist, but not to the same degree. Great stress has been laid upon certain differences in the conditions under which the inhabitants of respective countries live. In short, Mr. Harrison is inclined to think that geographical considerations carry more weight in searching for the cause of stone than is reasonable, and that there are other factors in the formation of such concretion which require investigation; at the same time local conditions of the soil, water, and climate have their influence on the production of urinary and vesical calculi.—Medical Record.

Uretero-Cystostomy, with Traction on the Ureter.—C. A. Smith, M. D.—It is generally recognized that a divided ureter should be reunited by some form of uretero-ureteral anastomosis, whenever such a procedure is possible. Grafting the proximal end into the bladder is the ideal operation, when this is not feasible, and even in some cases of pelvic injury where the divided ends are not accessible. In case of loss of a part of the abdominal or upper pelvic sections of the ureter, an anastomosis into some portion of the intestinal tract is recommended by many operators. The warnings against performing an anastomosis with traction on the ureter are due to fear of tearing it free from its new attachment to the bladder. The usual method of operating favors this result, where the ureter is secured by several sutures grasping its wall in the same plane, and attached to the bladder muscles only about the artificial opening into this viscus. This fixation is especially insecure if the sutures are applied parallel to the length of the ureter, thereby grasping only the circular muscular fibers, as is described and illustrated in some of the standard textbooks. Any form of suture entering the lumen of the ureter will withstand greater tension than one penetrating simply the muscular fibers. Experiments by the writer with different sutures, applied to ureters suspended by an extremity, have shown that one passing transversely through the entire wall will sustain an average of two pounds and six ounces before tearing loose, while one entering the muscles, but avoiding the lumen, requires only one pound and seven ounces for its separation. Longitudinal sutures passed through the entire wall, and these entering simply into the muscles, are torn out, respectively, by one pound and three ounces, and twelve ounces. Thus the greatest security of the ureter is obtained by passing the suture through the entire wall into the lumen. Since the ultimate union of the ureter and the bladder will result from adhesions between the two, it is manifestly desirable to make the surface for adhesion as extensive as possible. Implantation of the ureter at right angles into the vesical wall offers an area for attachment to the latter only one-eighth of an inch in breadth, which Morris gives as the normal thickness of the bladder wall. If this union between the two organs be extended to one-half or three-fourths of an inch, it simulates the normal condition where the ureter lies within the bladder wall for three-fourths of an inch, from its entrance at the serous to its exit on the mucous surface. At the same time, this relation of the two permits the distribution of sutures over a greater extent of the ureter, thus preventing all of the tension being made at one place, and holding the two in secure opposition until nature has established a firm union. The description of the implantation of the ureter in the bladder wall is as follows: First.—A ligature on a straight needle is passed through the proximal end of the ureter to serve for traction upon it, the caliber of the ureteral opening being enlarged by a small cut on its under surface. Second.—An incision one inch in length is made through the peritoneum at the fundus of the bladder, following the direction of the ureter, and the peritoneum dissected to each side, exposing the underlying muscles; at the lower end of the exposed muscles a small opening is made into the bladder, and the mucoca caught by forceps, for future identification. Third.—Two silk ligatures are passed deeply into the bladder muscles, obtaining a firm hold, but not entering the bladder, and through the entire ureteral wall. The first is placed a half inch from the bladder opening, and so applied to the ureter as to permit its extremity to enter the bladder. The second is situated nearer the vesical opening. Fourth.—The needle with the traction suture is passed into the bladder opening and out through the bladder wall. Traction on this pulls the ureter into the bladder, and retains it there till the above sutures are tied. The third silk suture unites the bladder muscles and ureteral wall at the opening. The traction suture is cut and drawn out of the bladder. Fifth.—The retracted peritoneum is united over the implanted ureter with a catgut, concealing it and the silk sutures. The doctor tabulates fourteen experiments on the ureters of dogs, at the same time giving a complete record of each, and the number of inches removed from each ureter; also the post-mortem findings, which showed in every case a diffuse nephritis or atrophy of the kidney on which the ureter had been transplanted. The following conclusions are reached: (1) The above-described operation will securely unite the ureter and bladder, whenever they can be approximated, in spite of the tension thereby produced. (2) The anastomosis may result in nephritis and atrophy of the kidney on the side of the operation. (3) This condition may follow any operation of ureterocystostomy. — Northwest Medicine, February, 1903.

Intraperitoneal Rupture of the Bladder.—An article published in the "Annals of Surgery," by D. F. Jones, states that previous to 1883, when Mr. Walter Rivington gave the Hunterian Lectures on this subject, it was the opinion of most men that intraperitoneal rupture of the bladder was fatal, whatever might be the treatment. In 1883, McCormack operated with success on two cases. In 1888, Dr. H. H. Grant published a case of intraperitoneal rupture of the bladder, with suture, the first successful case in America. In the author's tabulation of cases, he has found four cases that were omitted by Dr. Alexander, and three that were published after his report. Thus we have nine cases to add to Dr. Alexander's table, making a total of fifty-four cases of intraperitoneal rupture treated by suture. In the fifty-four cases, we have a death rate of 48 per cent. Rating the per cent of deaths up to 1893, we have a death rate of 63 per cent; since 1892 we only have a death rate of 27 per cent, showing a great improvement in the death rate,—of 36 per cent in the second period over the first.

MATERIA MEDICA: THERAPEUTICS.

By Z. TAYLOR MALABY, M. D., San Francisco.

Urotropin.—Lubowski presents a collective resume of the enormous amount of literature upon urotropin. The solvent power of urotropin upon uric acid is, according to this review, universally admitted. It is based upon the fact that urotropin is decomposed in the organism and formalin set free, which possesses the property just named in a high degree. The action of urotropin in bacterial affections of the urinary tract is also recognized by almost all observers. In suppurative processes of the renal pelvis (pyelitis) and of the urinary bladder (cystitis), it has proven most valuable, and of all remedies it is the best to arrest or prevent ammonical fermentation of the urine. The employment of urotropin in combating phosphaturia was first recommended by Windell, and subsequently confirmed by others. Excretion of phosphates was suspended during the administration of urotropin, and also for weeks thereafter. Finally it is given internally in typhoid fever, in order to free the urine of typhoid bacilli, which are often present in great numbers in this excretion. The danger of infection from this source is thus overcome. The bacilli disappear within two days. The dose of urotropin in all of the above-mentioned conditions is 1.0 to 1.5 grammes (15 to 20 grains) daily, never more than 2.0 grammes (30 grains).—Dr. Lubowski, in "Allg. Med. Zentral-Zeitung," 1902, No. 39; "Ref. Fortschritte der Medicin," Bd. XX, No. 35, p. 1185.

Treatment of Typhoid Fever.—1. Favorable hygienic surroundings. 2. Attentive and intelligent nursing. 3. A liberal supply of pure water and a limited mixed fluid diet. 4. Internal antisepsis. 5. Bowel irrigation. 6. Judicious stimulation. 7. Sponging and baths, cold or hot, according to individual indications. Now for some typhoid don'ts: 1. Don't, in the matter of diet, medication, baths, and so on, follow any routine. Avoid ruts. 2. Don't overfeed. 3. Don't overstimulate. 4. Don't use coal-tar preparations for fever, or morphin for delirium, diarrhea, or hemorrhage. The former are dangerous, and the latter can be replaced by better and less harmful drugs. 5. Don't try to overcome the disease by "slugging." Scientific "jabbing" is better, and tells in the end. 6. Don't accept the theory that drugs do no good, and accordingly follow a "do-nothing" treatment.—Peterson, in "The Post Graduate."

Sublamin.—A new salt of mercury, sublamin (mercury ethylenediamen sulphate), is stated to be of great value as a hand disinfectant, asserting that for this purpose it is superior to corrosive sublimate. It is not irritating to the skin, as is sublimate, while it is more soluble, and Schieftan believes that it will be of value in the treatment of syphilis. As regards its toxicity, by weight, when given orally or intravenously, it is less poisonous than the bichlorid, while subcutaneously it is equally so. He concludes that its non-irritating qualities render it especially appropriate for hypodermic use.—Drs. Hess and Danielsohn, in "Deutsche Medicinische Wochenschrift."

Treatment of Gastric Ulcer with Olive Oil.—Walko has previously reported the excellent result obtained in cases of gastric hyperacidity by administration of 100 to 300 gm. of oil a day. The fat inhibits the secretion of hydrochloric acid, regulates the bowels, and neutralizes the excess of acid. He has since applied the same treatment to gastric ulcer, with great benefit. The oil, besides the advantage enumerated, forms a protecting coating over the ulcer, soothing the inflammation and prompting healing. The boring pains subside almost at once after ingestion of the oil. It is also indicated after gastric hemorrhage, as it is less liable than milk to detach a thrombus. He gives the oil by the tablespoonful in cases of fresh ulcers, rinsing the mouth afterward with some agreeable mouth wash, gradually increasing the amount of the oil to 50 c. c. three times a day. In cases of excessive repugnance he pours it into the stomach through the tube.

He continues the oil treatment for three to six days, avoiding all other feeding per os until the severest symptoms of the ulcer have subsided. He has observed two cases in which the symptoms recurred after operation, but subsided after ingestion of oil. The patients are relieved in the course of the first week, and consequently this method of treating gastric ulcer is shorter than others. He has had an experience of seven recent cases of ulcer treated by this means, supplemented by rest in bed, and two who were out-patients, coming daily for the oil. The same arguments apply also to ulcer duodeni, and it is possible that some of the ulcers may have been located in the duodenum. Another advantage of the oil is that carbohydrates can be allowed with it, as the secretion of HCl is checked. He has lately been combining bismuth with the oil, and thinks that it may be possible to obtain in this way the advantage of both these methods of treating ulcus ventriculi.—A. M. A. Journal.

Treatment of Chronic Diarrhea with Hydrochloric Acid.—Soupault (Bulletin Gen. de Therapeutique) refers to the idiopathic, chronic diarrheas independent of anatomic lesions in the intestines and of local or general intoxications. The stools are fluid, and more or less frequent, with occasional colics. This condition may last for weeks or months, or even years, and attacks of acute diarrhea recur at the slightest cause. Ordinary treatment is ineffectual, or the slight benefit attained is rapidly lost; but Soupault has found that this form of diarrhea is rapidly, constantly, and durably cured by the administration of hydrochloric acid. The dose must be small to commence with, but soon progressively increases to 1 or 2 gm. a day. It can be prescribed in the form of 10 to 20 drops before meals in a glass of sweetened water, or in a lemonade made of 6 to 8 gm. of hydrochloric acid and 200 gm. syrup of lemons in 800 gm. water. It can be made more palatable by stirring into it the beaten white of an egg. When the suitable dose is reached, the benefit is apparent in two or three days, or eight at most. A tendency to recurrence of the diarrhea later is rapidly cured by a few doses of the acid. He states that in 32 patients examined he noted apepsia in 4, hyperchlorhydria in 6, normal gastric conditions in 3, and hyperchlorhydria in 19. The stools frequently contain substances from the last meal, suggesting insufficiency of the gastric functions and overhasty evacuation of its contents. Out of 38 thus treated, 23 have been completely cured, and 6 are cured except that the stools are still unformed. The others have been apparently cured, but recurrences have been frequent. Equally favorable results have been obtained in acute and subacute diarrheas in adults and children, as he intends to report in detail later.—Medical Herald.

Gelatin Used as a Hemostatic by the Ancients.—It is known that gelatin as a hemostatic was used more than a century ago. Dr. Y. Miva, a Japanese physician, now claims that the hemostatic properties of gelatin were known and made use of by the Chinese more than 1,600 years ago. Mention of the subject is to be found both in Chinese and Japanese literature. The gelatin was prepared from the hides of cattle, and was applied to the bleeding part in the form of a solution or a powder. It was employed in nasal, dental, urethral, uterine, and rectal hemorrhages.—Merck's Report, December, 1902.

Occidental Medical Times

Communications are invited from all parts of the world. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Published monthly.

OFFICE OF PUBLICATION, : : : 1121 SUTTER STREET, SAN FRANCISCO.

SAN JOAQUIN VALLEY MEDICAL SOCIETY.

The regular semiannual meeting of the San Joaquin Valley Medical Society was held March 13, at Fresno. The meeting this year was largely attended. Earnestness and enthusiasm filled the breasts of all, and a program of high literary merit was very successfully completed, under the careful guidance of the president, J. L. Carson, of Bakersfield. Many new names were added to the roll. The papers all show a highly-developed spirit of advance and progress. The discussions were lively and to the point, upholding the excellence and ability always so manifest in the proceedings of this body. The greatest harmony prevailed; good will was manifest on all sides, and a day of benefit from a literary and scientific point of view was closed with a banquet given the Society by the Fresno County Medical Society, where the fullest and freest discussion of the enjoyable occasion was given forth. The society numbers among its members the leading spirits in medical thought in this beautiful valley; it is representative, active, and aggressive. No man practicing in this district should fail to enroll his name. A better knowledge of his neighbor will be of immeasurable benefit; his learning will be increased and his life rendered more happy and more serviceable to himself and his patients. The next meeting will be held at Fresno on the second Tuesday of October. The following officers were elected for the year: J. B. Davidson, president, Fresno; E. L. Lilley, vice-president, Merced; N. P. Duncan, second vice-president, Hanford; M. L. Pettit, third vice-president, Visalia; J. R. Walker, secretary, Fresno; W. T. Barr, assistant secretary, Fresno; T. M. Hayden, treasurer, Fresno.

THE RENOVATION OF CHINATOWN.

The energy recently displayed by our mercantile associations in giving assistance to those in control of the renovation and disinfection of Chinatown is remarkable for non-believers. Since the finding of a case of plague on March 17, they seem to have redoubled their efforts, that the work should be done thoroughly and efficiently. Evidently they fear further censure and possible forceful action at the hands of the Eastern boards of health. The local board is greeted with smiles and encouragement, even unto the destruction of buildings. The State Board, too, has, for the first time since May 30, 1900, professed assistance, encouragement, and commendation of the good work, as is attested by the following:—

> "Whereas, the State Board of Health, organized in Sacramento, California, April 1, 1903, adjourned to meet in San Francisco, California, on April 22, 1903, and in a body visited the United States Public Health and Marine Hospital Laboratory, at 641 Merchant Street, and inspected the same, and from there proceeded to certain points in Chinatown to view its extremely bad sanitary condition; also inspected places and work of renovation now being conducted by the City Board of Health of San Francisco,—
>
> "Resolved, That this Board heartily approves of the work of renovation in Chinatown now being prosecuted by the City Board of Health of San Francisco, and the restoration of the

buildings in Chinatown to their normal condition, for the admission of light and air between these buildings; and we further indorse the work of inspection and disinfection now being conducted by the Federal, state, and municipal authorities in that district, and urge a vigorous continuance of the same work.

M. Gardner,
"President State Board of Health.
"N. K. Foster,
"Secretary State Board of Health."

Governor Pardee has appointed a board of health of excellent and sterling quality, and, as bearing evidence of good-will and of condemnation of his predecessor's nefarious conduct, has ordered the bill of Dr. Ryfkogel to be paid. In truth, the whole aspect of affairs seems changed, and even the newspapers, though still stultifying themselves as to the truth, are crying out for the removal of Chinatown. This would undoubtedly be a very laudable proceeding, were it sufficient, and if it could be done without too great cost and within reasonable time. It seems to us quite unpractical. The Chinese are rich, and own much of the property; the landlords greedy, and the courts of justice tardy. And even if this were accomplished, it is more than probable that the infection would remain with us. The lessons learned from other cities are in keeping with this view. In Honolulu, the Chinese district was efficiently disposed of; the error was made, however, in not destroying the means and source of contagion, the Chinese themselves. If they are deported to some other section of our city, they will carry with them their goods and chattels, their filth and dirt, their mode of life, and, above all, their total, absolute, and defiant indifference to American law and methods of life. And, as in Honolulu, the disease will break out again. The money would be better expended in maintaining the nuisance where it is than possibly scattering it over the city, especially if this money could be used in an honest, practical, and strict surveillance of this quarter. The eradication of plague in our city and in our country means the eradication of the "heathen Chinee," heathen to all that other civilizations deem wise and efficient. The blunder of our people was made two years ago, and has been maliciously and persistently maintained by those who now humbly plead for mercy.

A CORRECTION—A CASE OF PLAGUE.

The closing paragraph of our editorial on "Plague and Politics," page 101, March issue, contains an error which distorts its meaning; it reads, "We would like to ask Surgeon-General Wyman, if there was no plague in California on the 19th of January, how does he know that there was none on the 23d of February?" It should read, "We would like to ask Surgeon-General Wyman, if there was plague in California on the 19th of January, how does he know that there was none on the 23d of February?" Events have proven the absurdity of such messages and the folly of endeavoring to soothe the much-maligned and abused sensibilities of our commercial interests and local press. The intent of the telegram of February was promptly misinterpreted. The occurrence of a case on March 19 amply verifies our contention. Mrs. A. I. Mingelishi, a Japanese woman, 21 years of age, living at 520 Dupont Street, in the Japanese district adjoining Chinatown, was autopsied on Tuesday morning, March 17, at the Federal Morgue. The right inguino-femoral glands were hemorrhagic and necrotic and surrounded by edema. The spleen was twice the natural size, and was soft and pulpy. Capsular hemorrhages were found on each kidney. There was also a latent tuberculosis of one apex. Smears from the gland spleen show the bipolar staining organisms.

CORRESPONDENCE.

An editorial in the March number of the "Pacific Medical Journal," on medical legislation, and incidentally on the Board of Medical Examiners, requires comment, in order that the subject-matter may be more fully appreciated by the reader. Upon the threshold of this inquiry a sweeping general denial of all the alleged facts may be safely entered. The article is a tissue of misrepresentation, perversion of truth, and mendacity. The author is manifestly unfriendly to the State Medical Society, and why?—Because that society reprimanded him publicly for conduct unbecoming a medical gentleman, and he therefore attempted to disrupt the present State Society and form a new one. He failed, and why?—Because he could not secure a following that had confidence in his leadership, and because a majority of the profession were satisfied with the present society. The State Society was founded thirty-three years ago by the ablest and most prominent men in the state, and has since included in its membership a majority of the most cultured and intelligent members of the profession. That the State Society is not run by the editor of the "Pacific Medical Journal" is obvious; that it is not run by any clique in the interest of any college is most true; and that it is run by any number of men inconsistent with the honorable and efficient conduct of organized bodies generally is mendacious. By concensus of opinion, the State Society is regarded as authoritative in medical circles, and its archives representative of the best local thought and opinion. The fact that almost every county in the state has its local society, which is in close affiliation with the State Society, and that these societies comprise a majority of the cultured and working members of the profession in these localities reduces the allegation that the State Society is not representative of the profession to an absurdity. These facts must have been painfully impressed upon the ambitious, but disgruntled editor of this journal, in his late campaign to establish a medical empire of his own upon the dismembered remains of the old State Society. As an examplar of refined purity in medical politics and methods generally, the editor of the "Pacific Medical Journal" should be mentioned, in order to be shunned, if the testimony of his late professional associates may be taken at its par value.

This editorial omits to mention a certain mass meeting of medical nondescripts, called to protest against the action of the Board of Medical Examiners touching certain persons who had failed to obtain the required per cent in the examinations. This medical olla-podrida was dished up and presided over by a charlatan, pleading for reform and more satisfactory order of things in the matter of state examinations. There are those who are so uncharitable as to believe that it was the voice of Jacob heard at that meeting, but that the hand of Esau made the puppets dance.

The allegation that "a few selected medical colleges are behind a scheme to run certain other medical colleges," and that the "Board of Examiners is a party to such villainy," is absurd. There is not a reputable college that is so arrayed. Not a college nor a member of any faculty has ever approached any member of the Board on such a scheme. Not a member of the Board ever heard or dreamed of such a thing, until it was announced by the editor of the "Pacific Medical Journal." It is false in every particular. The mendacity of this pretended disclosure is only equaled by the brazen effrontery of its author, who, for selfish and ignoble purposes, dares to impeach the character and asperse the motives of men striving to discharge with honor and fidelity a difficult and important public trust. Such depravity is worthy of the perverted brain that conceived it and the perfidious tongue that utters it. Let not the editor of the "Pacific Medical Journal" be deluded. He is thoroughly understood and appreciated by the medical profession of this city. It does not desire him as its mentor, nor will it readily accept his standard of moral or political purity. It will be easier for him to change his curriculum than it will be for him to change his spots.

In conclusion, an explanation of the fact that at the last examination one member of the Board examined on three different subjects might clear up the matter. It transpired that a member of the Board to whom had been assigned two subjects was confined to his house by illness, and he requested a colleague to conduct the examination for him, thus making him responsible for three, not "half of all the examinations," as stated. Only once, and that in conversation with a candidate touching matters relating to his papers, his college affiliation came up. It has occurred only once, as far as any member can recall. The rule of the Board, conforming with the law, has been to ignore absolutely names and colleges. The writer has never known the name or college of any candidate that has come before the Board; and if names and colleges have been made known, it has grown out of a conversation wherein such data became known unintentionally. The animus of the author is slander and falsehood touching the official acts of the Board of Examiners, for reasons already set forth.

To summarize the editorial of the "Journal," the editor knows that his charges against the Board of Examiners are false, his facts fabrications, and his argument delusive and sophistical. He knows that the Board of Medical Examiners have entered into no scheme to favor or to oppose any college or the graduates of any college. He knows that favoritism or unfairness on the part of the Board towards candidates for examinations has never been contemplated, countenanced, or practiced. He is aware that the trend of medical education in this country is upward, toward higher standards. He is conscious that this movement has been instigated and is sustained by a majority of the cultured and enlightened men of the profession. He knows that the standard required by the Board of Examiners is fair and in consonance with standards elsewhere, and that it is approved by the colleges on this coast. He knows that this standard necessitates preliminary education and thorough training in scientific methods during a four-years' course. He suspects that this kind of education is expensive and less popular than it should be. He knows that a uniform, elevated standard of attainment can only be maintained by independent examining boards. He has heard that the medical profession of the United States has determined on reform in medical education, and that it has devised and established independent examinations as a means to accomplish such reforms. He knows that these boards are the bulwark of medical scholarship and sound education. He knows that the standard of these boards means the death of commercialism in medicine and the downfall of incompetents; that gentlemen who undertake medical education as a financial enterprise and as a means of self-aggrandizement are out of business on these lines. All of these things, so luminous, so distinctly recognizable, so generally acknowledged, and so righteous, appear to perturb the otherwise serene countenance of the proprietor of the journal who, besides being an editor, is a numerous educator.

A Member of the Board.

SOCIETY PROCEEDINGS.

SACRAMENTO SOCIETY FOR MEDICAL IMPROVEMENT.

Regular Meeting, Jan 20, 1903.

The president, H. H. Look, M. D., in the chair.

NEPHRECTOMY.

Dr. G. A. White said: At our last meeting I reported two cases of nephrectomy. I now wish to add another case, which occurred in my practice some ten days ago. The patient had been under the care of Dr. S. A. McKee from time to time for two or three years past, and had suffered principally from hematuria and nephritic colic. At no time, however, was stone found in his urine. The patient had been examined with the X-ray by Dr. W. A. Briggs, with negative results. Owing to the incessant pain and continued bleeding, it was deemed advisable to remove the kidney. I was assisted in this operation by Drs. McKee, Stephenson, and John White. The removal of the kidney was accomplished without difficulty. No stone was found in it. The kidney was enlarged, with evidences of nephritis, and there was a thickened and turgid condition of the mucosa of the pelvis. There was a striking contrast between the first urine passed after the operation and that which had been voided at each urination for a long period prior to the operation. The urine was nearly normal in color, being but slightly tinged from the residual urine in the bladder. At no time subsequent to this was there present the slightest amount of blood. The other kidney was in a state of perfect health.

INTESTINAL RESECTION.

Dr. White also reported a case of intestinal resection. He said: Two days ago I operated, for strangulated femoral hernia, upon a fleshy woman about 60 years of age. A loop of gut had been incarcerated for thirty-six hours, and attempts at reduction by taxis were ineffectual. Nine inches of the intestine were found to be gangrenous, and with deeply congested ends near the gangrenous line. In order to get into healthy tissue, I removed about twelve inches of the gut, uniting the ends by means of a Murphy button. The patient made an uninterrupted recovery, the button being passed the ninth day.

THE INFLUENCE OF THE X-RAY UPON TISSUE NUTRITION.

Dr. W. A. Briggs: I have a case to report which illustrates the probable influence of the X-ray upon the nutrition of tissues and upon their repair after surgical procedures. About three weeks ago, with the assistance of Drs. Parkinson and White, I made an exploratory incision in a case of cancer of the gall-bladder, with secondary infection of the omentum and mesentery. The gall-bladder was immensely distended. As the man was suffering severely, the gall-bladder was removed and the greater part of the large omentum resected. The patient made an excellent recovery, with the exception of a pneumonia, from which he suffered afterwards. We found great difficulty in closing the abdominal wound. We could not bring it together with the ordinary layer sutures; we had to use through and through sutures through the whole course of the wound. On the morning of the tenth day there was suppuration along the stitches at the lower part of the wound, and I thought it best to remove them. The next day about three inches of the lower part of the wound was gaping, and ten or twelve inches of the small intestine lying on the abdomen. This lower part of the wound was where the X-ray was applied over the cancer. I had used the X-ray for some five weeks previous to the operation, and over this area there was non-union through the entire abdominal wall; above this point there was perfect union. Non-union was probably due to the action of the X-ray upon nutrition, which may be a point for future consideration in cases of this kind.

CHRONIC COFFEE POISONING.

Dr. W. J. Hanna: I was called to see an old gentleman eight days ago who was suffering from a severe attack of constipation. His abdomen was distended, and he was suffering a great deal of pain. I gave calomel and salts; the next morning, finding that these had not acted, I gave a large enema of soapsuds and water, with good results. Later on I introduced the rectal tube, and removed a small mass of feces. In the afternoon I administered castor-oil, turpentine, and laudanum, with excellent results. The bowels moved freely, and a lot of black material was evacuated. He, however, passed into a semiconscious condition, and so remained until he died. His wife told me that he was in the habit of drinking eight or nine cups of strong coffee every day for four months previous to that time, and, in addition, that he would go to the coffee bag and eat ground coffee. Dr. Twitchell saw the case in consultation, and we concluded it was one of chronic gastritis brought about by the injudicious use of coffee. Since that time I have seen a similar case, that of a merchant who was in the habit of eating coffee by the handful, using a great amount of it. I believe the case of the old gentleman was one of chronic gastritis, due to the injudicious use of coffee.

TRANSITORY HALLUCINATORY CONFUSION.

Dr. E. W. Twitchell: I wish to report a case of transitory hallucinatory confusion in a young woman, aet. 21. She was first seen Jan. 2, 1903. For past few days had hallucinations of hearing. Thought those about her were making disparaging remarks concerning her. Showed much confusion; answered questions slowly, as if perception and comprehension were retarded. Vegetative functions normal, except slightly disordered state of secretions. Ordered rest from work (domestic service), and tonic of nux vomica and hydrochloric acid. January 9. Began to improve two days ago; slept well, and head felt clearer. Spoke no more of hearing voices. January 18. Hallucinations are still absent, and, with the exception of slight influenza infection, patient is doing well. Has gained two pounds in weight in past ten days. Recently wrote a coherent and rational letter, which she had failed in doing once or twice during the first stages of the attack. Recognizes the absurdity of her hallucinations. February 6. Complete return to normal conditions. Treatment discontinued.

GASTRITIS; ITS CAUSE AND TREATMENT.

Dr. C. O. Cartwright read a paper entitled "Gastritis; Its Cause and Treatment."

Dr. W. A. Briggs, in opening the discussion, said: We have listened to an excellent paper on an important subject, and in the discussion, as far as I am personally concerned, I shall leave to my colleagues of the Oriental side of the divide the discussion of the etiology and pathology and other scientific points in this connection, and shall myself, as I think we of the Occidental side should do, give more particularly the result of experience and observation in the treatment of these cases. I would like to make one observation as to etiology, however, that in this disease, it seems to me, the real cause of gastritis, as in other inflammatory processes, is infection. The other so-called causes are what we used to term predisposing causes, and not exciting causes or actual causes of gastritis, any more than the exciting cause of appendicitis or of any other inflammatory process. In the treatment of these cases, to which I shall direct my attention particularly, we should ascertain and respect idiosyncrasies, perhaps, more in the treatment of the stomach than in that of any other organ of the body. We are too prone, I think, to generalize, either from our own personal experience or from a limited observation. But in this I am sure we often err. We should distinguish between vagaries and idiosyncrasies. We should simplify but vary the diet; we should vary it because appetite is said to be the best sauce, and those foods that we relish, other things being equal, are proportionately more digestible. Therefore, we should, it seems to me, endeavor frequently to vary it and extend it as far as possible. Milk is invaluable in the dietetic treatment of this disease. It does not suit all cases, but in a great majority it is extremely useful. There are cases, however, the extremely acid ones, in which milk in any form disagrees, notwithstanding the addition of lime water or other alkalies. These are rare exceptions. In the acid cases, I give milk with lime water, or with effervescent water, bicarbonate of soda, and occasionally peptonized. In the subacid cases, I have, it seems to me, found great advantage from the use of the dilute hydrochloric acid in milk, giving 12 to 30 minims well mixed with a glass of milk. There is a chemical combination between hydrochloric acid and casein which removes the former from solution. Milk is, after the addition of the acid, very slightly acid, and patients take it without difficulty. Patients who are unable to take milk in any other way are often able to take it in this way. In the atrophic cases, with the absence of hydrochloric acid and the digestive ferments, milk should be peptonized and acids not given. When the stomach no longer secretes hydrochloric acid, it ceases to be a digestive organ, and in such cases we should prepare food for intestinal digestion, using pancreatin, papain, and other digestives. In these cases we should use concentrated foods that do not overdistend the stomach. Such foods as beefsteak, eggs, and animal foods should be papainized. I have found great benefit from the papainizing of animal foods in these cases. It has been my practice to prescribe papain one part and salt five parts, which is used instead of salt on eggs, meats, and fish. If you prescribe in this way, you should instruct your patients not to sprinkle it on large quantities at one time, as digestion begins very quickly, and the food becomes "slippery" almost immediately. It should be sprinkled on the food mouthful by mouthful. I have tested this personally. I use papain quite freely, and have found it unobjectionable, if properly used. I should use concentrated and quickly-digested foods, because gastritis is due to infection, and if food remains long in the stomach, and digestion is delayed, bacteria multiply and aggravate the infection. Therefore we should obviate, as far as possible, reinfection of the mucosa in this way. In regard to lavage of the stomach, I agree with the author that washing out the stomach is valuable; I have seen excellent results from it in a large number of cases. It is not a specific, but when there is obstruction or dilatation or atony of the stomach, lavage is of great value. Instead of washing the stomach in the morning, I prefer washing it out at night, as by so doing the stomach gets more rest. By washing it in the morning, and not at night, food will remain in the stomach well into the night, and keep it active far beyond the normal period. There are exceptions to this rule. In the mucus cases I have no doubt the morning wash is preferable to night washing. In the treatment of difficult cases, I have found the utmost advantage in rectal feeding. I have treated a large number in that way, and have kept such cases constantly on rectal feeding for two or three weeks, with frequent success. It is surprising how the general nutrition may be maintained by judicious rectal feeding. As chronic gastritis is an infective process, I think antiseptics are useful in its treatment; but for the reason that antiseptics only reach the surface, and do not penetrate the glands, and therefore do not reach the real diseases, they are not as efficient as we might expect, but they do clear the stomach of a large number of bacteria. I believe the new antiseptic, acetozone, may be used with advantage. It is a powerful germicide, and is non-toxic. Precaution should be taken to dissolve it some time before using, for if small particles are left suspended, they are more or less irritant, but when thoroughly dissolved, I have found no complaint. It also has an odor which is offensive to some patients. Constipation is something we must obviate in these cases as effectually as possible, as we have an impaired intestinal digestion in these cases, and if foods are allowed to remain in the intestinal tract, toxemia becomes a serious matter, affecting the nervous system greatly. Therefore it is of great importance to secure complete evacuation of the bowels. I learned a great many years ago, from my friend on the left, the use of bran in the treatment of chronic constipation. It is of the utmost value in a great many cases. It may be prepared as mush, and eaten with cream, or made into crackers or heated in the oven, and eaten dry. In any of these three ways, the use of bran will secure sufficient evacuation of the bowels. Laxatives, while necessary, are irritating, and in the long run are very likely to increase the intestinal catarrh. Sugar is particularly objectionable in chronic gastritis. A few years ago, I attempted the use of sugar by the rectum, thinking that in that way I could improve the nutrition in cases in which I used rectal feeding, but I soon found the colon intolerant to the use of sugar. This is also true of the stomach. Sugar is not only prone to fermentation, but it is also a direct irritant of the gastric mucosa.

Dr. J. W. James: After a diagnosis of chronic gastritis has been made, it is important to ascertain whether it be of a primary or secondary nature. It is also important that we understand the degree and stage of the pathological changes, as the pathology and treatment of this disease go hand in hand. Ewald has divided the pathology into three stages, the simple, mucus, and atropic. First of all, the secretion of hydrochloric acid is lessened, which is a loss to digestion, while its antiseptic properties are lacking. Therefore the ingestion of hydrochloric acid is indicated. It supplies the normal antiseptic quality of the gastric juice and stimulates the secretion of pepsin. I find that some of the most prominent authors advocate the administration of hydrochloric acid in this trouble, giving it in very large doses, and no untoward effects have been noted. I have watched the kidneys in these cases, and could detect no ill effects from elimination. Acid is not indicated in the mucus variety. In these cases I have found great benefit from lavage of the stomach before meals with a dilute solution of nitrate of silver. The treatment of the atropic stage has already been outlined by Dr. W. A. Briggs. Dilatation is also a very important condition, and it is caused either by obstruction at the pyloris or atrophy of the stomach wall. Chronic gastritis is caused in a large percentage of cases by overeating, where large quantities of food, and especially of an improper variety, are taken into the stomach. The organ is so distended that its motor activity is impaired, the food remaining so long in the stomach that decomposition sets in. Chronic constipation often follows, and is very hard to get rid of. I had a very persistent case of constipation, accompanied by chronic gastritis. First I advised the patient to choose a convenient hour in which to attempt to evacuate the bowels, and to religiously adhere to the habit of going to stool every day at the appointed time, using the ordinary methods of cleanliness, whether an evacuation took place or not, the idea being to stimulate peristalsis reflexly by irritating or titilating the nerves around the anus. He was also to massage the intestines by a kneading process or by using a large wooden ball, rolling it over the abdomen up the right and down the left in the direction of the colon. Where there is complete atrophy of the gastric glands, it is better not to treat the stomach, but simply to use it as a receptacle for the food. The food should be such that it is prepared for intestinal digestion.

Dr. G. A. Droll: I find that individuals who have been troubled with gastritis are people who have been hearty eaters, eating often between meals, and also eaters who have been constantly taking bad combinations of food. In regard to treatment, there are so many different conditions met with that each case has to be treated according to existing conditions. You can not find any two individuals whom you can treat alike and obtain the same results.

Dr. J. E. Poore: I had a case some time ago of cirrhosis of the liver, where the gastritis was very apparent and very obstinate.

The patient was about 45 years old, and had been under the care of several of our leading physicians, but without receiving any apparent benefit. There is no doubt but that some of the most fruitful causes of gastritis are irregular and careless feeding, gross feeding, and improper diet. Eating candy to excess, the use of soda water and ice-cold beer, are causes of chronic gastritis.

Dr. H. L. Nichols: I believe the stomach is one of the most-abused organs of the body. We seldom see a case of chronic gastritis except from such abuse. The stomach is well prepared to perform its duties and take care of whatever may reasonably be put into it. I believe it is also able to protect the system against bacteria. I think that, if the stomach is kept in a normal condition, there is very little danger even from typhoid germs taken in water. The acids in the stomach are sufficient to take care of these things. The greatest cause of chronic gastritis is overeating and the use of alcoholic drinks. The remarks of Dr. W. A. Briggs in regard to giving antiseptics were very pertinent. Washing out the stomach is also advantageous, although I knew a patient many years ago who injured himself by washing out the stomach on his own account. He would drink large quantities of water—a gallon. Finally his stomach got in a terrible condition. I believe many people drink too much cold water. The remedy mentioned by Dr. James to obviate constipation, which he called a little matter, I consider a very important one, that is, by going to stool at a regular hour each day, whether inclined or not. A person will soon become habituated to it, and have no trouble with the bowels. Massage is also excellent. It helps very materially.

Dr. H. E. Wright: I am inclined to feel as Dr. James does with regard to overeating being the main cause of chronic gastritis, also drinking at meal times and during the first hour after meals. I have a patient in mind, who is past middle age, who drinks three cups of coffee in the morning, and also eats between meals. He had a coated tongue and mucus patches. By abstaining from coffee and lunches, eating his meals dry, and by using bran and other coarse foods in the morning, the trouble was corrected. I can not help but think that there is always more or less intestinal indigestion, and that the use of such intestinal antiseptics as pancreatin, naphthol, and bismuth will be of great service. In regard to the chronic cases, I believe that two-hour feeding, a little at a time, and one thing at one feeding, and something different next time, will go a long way toward correcting these cases. A cup of moderately hot water taken one hour before meals, with rest after meals, is very beneficial. I feel that the fewer remedies we use in these cases of chronic gastritis, the better we succeed. In regard to constipation, I have a case in mind, that of a young girl, who described her sensation at that time as desiring to go to stool,—a feeling as if her bowels would move, but she was unable to deliver the mass. That case yielded completely to the use of bran mush and a coarse cracker known as the hygienic cracker, heated by toasting, for breakfast, with very little fluid, and that taken after the meal.

Dr. G. A. White: The surgery of the stomach has not been referred to by the author, for the reason, I presume, that gastritis has not heretofore been considered a surgical disease; nor is idiopathic gastritis to be classed as such, but there are so many organs that when diseased cause reflex gastritis that they should not be overlooked when considering this subject, and the surgical side of the question to many of us has special points of interest. Among the causes of reflex gastritis may be mentioned diseases of the brain and nervous system, disease and displacement of the kidneys, disease and displacement of the uterus and its adnexa, disease of the liver and gall-bladder; and among the diseases of the stomach itself, which in the earlier stages simulate gastritis, may be mentioned perforating ulcer, stenosis of the pylorus, and cancer. These latter are principally surgical diseases, and to treat reflex gastritis without considering the diseased organs which cause it, would necessarily fail of results.

Dr. W. J. Hanna: There is no doubt but that injudicious eating and drinking are a fruitful source of chronic gastritis. I agree with Dr. White in regard to surgical procedure in cases of chronic gastritis. When at the Southern Pacific Hospital, a case came under my observation, that of a young man suffering from chronic gastritis, and it was decided that he had stenosis of the lower end of the stomach. Dr. Huntington operated on the case. An incision was made, and the pyloric end of the stomach was opened and dilated. He recovered, and went to work. In four or five months, he was operated on again, when a thorough operation was done. He made a good recovery. I saw him two years afterwards, and he told me he was getting along without any trouble.

Dr. E. W. Twitchell: It is remarkable the amount of damage that can be done in a short time by the excessive use of intoxicants,—alcoholic drinks. We sometimes have cases of so-called total abstainers suffering from chronic gastritis, where you will find, on closer questioning, a history of heavy drinking in previous years, perhaps thirty years previously, and their being total abstainers for thirty years did not help out the condition of an abused stomach with its atrophic glands. Here the matter of diagnosis is important. Some suspected cases turn out to be neuroses. We do not usually see cases of chronic gastritis in their incipiency. When we get a case, it is usually pretty well along towards the atrophic state. It is only an exceptional case you get in time to do much with, as regards a cure. I am somewhat skeptical about those acid cases; I think they are cases of neurosis. I ran across four of them recently, and they all got well. I do not think they were cases of gastritis at all. Chronic gastritis is one of the few diseases where we are excusable for the use of pepsin. Lavage is useful in chronic gastritis as a cleaning-out process, also in the excessive mucus cases.

The President, Dr. H. H. Look: There is probably one feature of this discussion that has been left out. That is the psychical,—the influence that mental impressions have upon the stomach. The mental and moral impress that one receives is a very potent factor in the causation of many functional or organic gastric troubles. Serious mental trouble, if continued in, will produce chronic stomach trouble. I have in mind the case of a young lady who developed severe gastric trouble—chronic gastritis in its worst form. There was no apparent reason for it. Finally she left the city, contracted intimate relations with a man, and, after a short time, came back absolutely cured. That case was a remarkable one. I was pretty well convinced the causes were emotional. The sense of smell has a most potent influence over the gastric function. There are more cases of that sort than we dream of. In some of these cases, where the stomach has been abused, limburger cheese will bring about a rapid secretion of the gastric juices. The extensive use of garlic, onions, and vegetables amongst certain European races is certainly a great preventive of stomach trouble.

SAN JOAQUIN VALLEY MEDICAL SOCIETY.

Regular Semi-annual Meeting, March, 1903.

The president, J. L. Carson, M. D., Bakersfield, in the chair.

THE MUNICIPAL CONTROL OF THE MILK SUPPLY AS A SANITARY MEASURE.

Dr. G. H. Aiken, Fresno, read a paper with the above title. [Published at page 111.]

Dr. W. W. Cross, Visalia: This paper contains very much valuable information, but when commerce and the opinions of doctors come together, there is usually a clash. The system outlined for the distribution of milk is ideal. We all agree that such measures are desirable, but I have long since stopped any effort to convince people of this or that fact; I now leave them alone. If you prove the source of an infection from a dairy or a well or house sewerage, you are immediately confronted by the statement that they use boiled water, etc., but under severest protest they continue to sacrifice lives of the community. How to reach these conditions is the question. It is the story of Andrew Jackson and his financial affairs. They get sadly mixed. When you commence to fight these conditions, an injunction is put in force. It is claimed that an attempt is made to break up their business. Fresno County can not handle this question. The bacteriologist will be blamed. No effort on the part of physicians seems available against commerce. We have had plenty of evidence of this fact during recent years. The United States government alone can control it.

Dr. T. M. Hayden, Fresno: I have been associated intimately with Dr. Aiken in this project. I am surprised that any one should hold such pessimistic views. The Board of Health of Fresno will not recall its stand. The progress made is very remarkable, as shown in various ways, by the mortality, by the character of men employed in the dairies, by the improvements in the surroundings, buildings, stock, method of delivery, and acknowledged reports from various sources. Firmness is necessary. Many dairy men have gone out of business, but the community has been the gainer thereby. This is better for the intelligent and progressive men now in control of the business.

Dr. W. W. Cross: I do not mean to say that the commercial interests are always a menace to such advance, but there is usually strong opposition.

Dr. G. A. Hare, Fresno: I desire to express vigorously my hearty endorsement of this paper and its purposes. Two questions are now before the society, both most practical and good. The first one is: "Will the medical profession stand by the community?" It seems to me that the medical profession must now act in behalf of the community. If we do not, it is our own fault. We need due authority, properly urged and guarded. It is our duty to secure party organization and endorsement in health and sanitary matters. Organization is our best means and safeguard. The work here has brought about abundant results, in other lines, as well as in this particular improvement, and as we go along and advance further our methods and results will improve. Those factions that have opposed us are now fairly under control. The standard of public health should be raised. Some years ago a physician before our State Society said that these improvements lessened the physician's practice. The facts presented bear out Dr. Aiken's statements. I hope that this county and every other county will adopt such measures.

Dr. R. O. P. Phillips, Kingsburg: Fresno should congratulate itself on its board of health. One thing this discussion insists upon is the necessity of perfect cleanliness. This is the essential point, the thing in life. The surgeon seeks it in the sanatorium and in his daily work. All agree that germs are contained in milk. Water, in my opinion, stands first as a conveyer, therefore we should be very careful of both. In a recent case of typhoid infection, the father complained of my officiousness, and contended that the water was not the source of trouble, but the recurrence of other cases in the family soon convinced him. Society has a right to protect itself, and must have laws for this purpose. Many diseases are due to uncleanliness and carelessness, and it is equally necessary that we should protect ourselves from measles, smallpox, etc., as those diseases conveyed by milk and water.

SUBARACHNOID INJECTIONS OF COCAIN.

Dr. A. J. Pedlar, Fresno, presented a paper on this subject. [Published at page 121.]

Dr. A. W. Morton, San Francisco: This

method of analgesia appeals to me, because it does not destroy the senses. I follow the technique described. In my first paper I gave expression to the hope that the analgesic effect would be extended over the entire body. I am glad to hear Dr. Pedlar say that he has used it for work on the upper extremities and face. I have reported about seventy cases of analgesia in the head and upper extremities. So extensive an effect has been doubted. It is also stated by some that the analgesia is confined to the lower extremities only. Hence actual experience, and not what one thinks, is necessary. In my experience the analgesia is as good in the upper as in the lower extremities. There is no doubt but that the psychologic condition is more prominent in the upper extremities. You must use suggestion; it is a powerful factor. The surgeon must use this factor, and impress on the patient that he will be free from pain. The suggestion is often made that there is no pain, hence tactile sensation will often give rise to a belief that it exists. Only once have I used a general anesthetic to complete my work. In this particular case the operation was nearly finished, but the patient demanded the anesthetic, as she realized that I was at work because she happened to see me. It is the mental condition of the patient, and not actual pain, that thus becomes one source of failure. Another arises from faulty introduction of the needle, for if you do not insert it into the canal directly, there is no analgesia, because the solution is distributed on the outside. Another point is that you should not dissolve the cocain in water, but in the cerebrospinal fluid, which makes it certain that you are in the subarachnoid space. Then, again, you will not get so much shock if you dissolve the cocain in the cerebrospinal space. Then you are not apt to have headache and nausea, and less disturbance in the cerebrospinal centers. This method is a great improvement over making a solution, then injecting, and avoids a possibility of infection. The statement has been made that there are no leucocytes in the cerebrospinal space. We have that by introducing some form of infection that leucocytes rapidly appear, and therefore believe that there is less danger of infection than as thought. Can any form of analgesia equal a record of three out of twenty-seven cases where there was no nausea? This fact plays a great part in the safety of the patient, and there can be no question that many cases suffering from kidney, heart, and lung diseases can be safely given cocain in preference to other anesthetics. There is one class of operations where I prefer cocain to any other anesthetic; that is in operations on the buccal cavity, for here complications such as suffocation, inhalation pneumonia, and gastro-intestinal disturbances are entirely done away with by spinal analgesia. In operations upon, and for the removal of, the thyroid gland, general anesthesia is especially dangerous, because of the liability of cutting the recurrent laryngeal nerve. Under cocain I have requested the patient to talk, so that I would know when I touched the nerve, and have dragged on it to show the variation in speech, and to prove that it had not been damaged in the operation. In neurotics, cocain, in my opinion, acts remarkably well, even better than in the phlegmatic, for if you use a little tact, they are generally susceptible. Reports of these operations on the upper extremities are especially flattering to me. Foreigners and Easterners do not concur in these results, but on the Pacific Coast we know what can be done.

Dr. W. S. Fowler, Bakersfield: I wish to add, in confirmation of what Dr. Morton has said, a report of a case of spinal analgesia in a neurotic. We were at a loss for some time to understand her complaints of pain, when according to touch and manipulation there seemed to be no evidence of such a condition. By carefully watching, we found out that she saw everything that was being done by means of a mirror situated above the table. As soon as her vision was shut off, she no longer complained of any pain.

Dr. W. W. Cross, Visalia: I was driven to the use of cocain because Morton demonstrated to me its wonderful effects and its ease of application. In my first case the needle went directly into the space, with the happiest effect. I have only seen nausea develop where the injection was left outside of the canal. The only case where I had any reason to regret was one of continued uterine contraction. We gave an injection of two per cent solution to a large, fleshy woman; in six minutes the pain stopped; it did not recur for some time; after full preparation, I applied the forceps; there was no laceration, but an easy labor; contractions continued, the expulsive force was strong. A second case of breech presentation, where I waited twelve hours and there was no advance, five minutes after the injection the patient was laughing and talking, and with the aid of the forceps a quick delivery was secured. In the use of general anesthetics there is usally a high degree of cyanosis; this has never occurred in my experience in the use of cocain. Hemorrhage is less after the use of cocain in obstetric cases than after the use of a general anesthetic; the uterus contracts rapidly, and if there is a tear, it can be repaired at once. Another pleasant feature is the ease and freedom from pain and after pain when the child is placed at the breast. In a general anesthesia there are many complications of organs, such as uremia, pneumonia, which do not occur after cocain. In cases of heart, lung, and kidney lesions, I prefer spinal puncture. In one case I had considerable depression and dizziness, which lasted for a week.

Dr. G. H. Aiken, Fresno: I rise to criticize the subject in question, not from experience, but from prejudice. There exists a moral obligation in the practice of medicine that no one has any right to resort to any measure that severely endangers life. The concensus of opinion is that the death-rate from spinal analgesia is 1 to 200, while the death-rate from chloroform and ether is 1 to 2,000 to 10,000. The thing, then, that appeals to me is, Have we any right to use this method with such facts before us? It is one thing to use this method in public institutions, but would we use it with the same freedom in private practice? I have never had any experience, and will not have it; I am afraid of it; progress is all right, but we have no right to place life in such jeopardy. I am not in favor of chloroform, because it is easier of administration than ether, which is less dangerous than the former, and naturally would not use cocain because of its admitted dangers. Its dangers have not been minimized. I witnessed one case, which gave me the horrors; the outcome was successful, but if the same conditions in the patient had become manifest with the use of chloroform or ether, I would have been greatly alarmed. I would not use it in my own family or in private practice. I have watched reports, and have carefully noted how tardy authorities have been in recognizing the good qualities of this method. [Here Dr. Aiken read a report by Dr. Morris, of New York, from the "International Journal of Surgery," which questioned the value of the procedure.]

Dr. W. W. Cross: We have in California the very highest authority on this subject in the world; and others have used it just as thoroughly and efficiently as he. What we want is not argument, but experience. If you miss entering the space, you may do damage; the technique must be sufficient and perfect. Recently I read a report of a case in the "Journal of the American Medical Association" where the spinal fluid was withdrawn, placed in a dish, the cocain dissolved in it, drawn into a syringe, and injected into the canal. Such technique is demoralizing and dangerous, and is what causes the death-rate. Morton reports but one case of failure, where he honestly admits that the shock killed the patient. How many men will do this in the use of chloroform or ether? I believe in it because I am using it successfully; if I had bad results, I would be sorely blamed. The general practitioner is not capable of doing this work, and when it is properly used, after long experience, the aspect presented of the subject will be entirely changed.

Dr. W. S. Sherman, Fresno: I have never used this method, but have attentively watched the reports. As in the use of many new things, we do not figure out the personal equation in the matter. This has been evident on many occasions; consider Newman's work in treating structure by electrolysis, etc. Hence there are many phases to the question; one man's failure is due to carelessness, another's to want of skill, another's to some little thing that could have been easily avoided. Hence I would rather risk cocain in Morton's hands than chloroform or ether badly administered, or allow some dirty man to assist me in obstetrics. Most of these fatal cases are due to inexperience and prejudice. The history of the use of cocain is easily paralleled by the history of appendicitis.

Dr. O. W. Steinwand, Fresno: I had the same impression as Dr. Aiken, until I witnessed the work of Dr. Morton. Reports differ with regard to results. I read that referred to by Dr. Cross; it was no wonder that the effects were bad. With the use of the dry cocain the success was better, only 3 in 30 where vomiting occurred; gives better results than any found after general anesthesia. In one case where it was used, neither ether nor chloroform could be administered. Spinal analgesia acted beautifully on a very nervous person.

Dr. Aiken: It is not given to all men to be aseptically clean, all skilful, nor can two or three always be perfect. The statistics are against the method.

Dr. G. A. Hare, Fresno: I have used this method once or twice. We all have a good deal to learn about it yet. I have seen no satisfactory explanation for death after spinal analgesia. It seems to me that the addition of 15 or 20 drops of fluid can not interfere much with the circulation in the canal. Many of the bad effects have been attributed to idiosyncrasy. I have a great deal of respect for this method. I have used cocain for fifteen years, and have seen alarming results from insignificant amounts. In one case, a German woman asked for the "stuff they injected;" she would not accept chloroform or ether. The effect was very satisfactory. Recently, while in the East, I heard its administration criticized very severely. It seems to me that there will be spinal trouble afterwards, especially if used by careless operators. I would like to ask Dr. Morton about the after-effects. I have watched the reports with special reference to the after-history. I recognize the method as one of great power and less dangerous than the reports assert. It is a field unoccupied by any other anesthetic, and is superior in many cases. Many deaths from chloroform and ether are never reported.

Dr. Pedlar: The matter of suggestion is an available feature. In a recent case of necrosis, seven minutes after injection the patient began to complain and ask for more; no amount of suggestion availed, and, as a proof that it was simply nervous, and no actual pain, swabbing, chiseling, and pinching did not make the foot move, nor was there any inclination to get it away from the point of attack, showing that there was no pain, but that the knowledge of what was going on caused him to complain. In order that suggestion is to have its effect, control of the mind and confidence of the patient must be previously secured. I have had no nausea, dizziness, headache, but always use morphin and atropia before the operation. The poor results observed by Dr. Aiken were due to technique in a bad case of old fracture, and in a second operation on the same patient no such experience was evident. I have had no after-deaths. As regards statistics: Mohr, of Germany, quotes a death-rate of 1 to 200, and he also says that the analgesia never passes above the diaphragm, nor does it last long enough to do the operation, both of which statements are quite untrue. I have consulted the record of 16,000 cases, and never found such results. Morris' statement is to the effect that he only heard of, and never saw, any of the deaths reported. Some one has stated that he heard that deaths had occurred in Tuffier's clinic. He himself said that no death has occurred. Murphy, of Chicago, says that in Tuffier's clinic, in 502 cases there has been but one death. It is prejudice against the operation that leads to most of the statements; for even Victor Horsley, though he had never used the method, condemns it. If we go back fifty years, and look over the early history and statistics of chloroform anesthesia, we find the same opposition. It takes time to learn how to administer it and to understand the technique. It is new, but few have used it, and it is unfair to condemn it without use and experience. I have not had a fatal case, nor have I ever had any from chloroform.

Dr. J. L. McClelland, Los Banos: I am a crank about chloroform, and I prefer it under any circumstances to ether. Statistics as reported vary so much that they have no value in the use of these drugs. I have never had a death from it. The death-rate of 1 to 200 is usually brought about by faulty technique.

Dr. A. W. Morton, San Francisco: The question of after-results is an important one. Except in the case of one death, I have never had any, either in clinic or in private practice. Cocain is being recognized as the anesthetic where ether or chloroform can not be used. Criticism is just and desirable; when it is severe, it is best, but when it comes from those who never used the method, its intent is obvious. Many men in San Francisco who opposed before they used the drug are now very enthusiastic. Among the unfair criticisms that have been made, two deaths have been credited to me from cases I have never seen; one was a case of pneumonia and the other a medical case of unknown character. I have a letter from Dr. Park, of Buffalo, to Dr. Smith, who confessed that he did not believe in it, but later, after reading my report, which he explained to his class, he began the use of cocain with much success. The dangers are not alarming; if you can not get fluid into the canal, or if you strike a nerve or a bone, no damage is done. Sepsis is the danger, but all must be clean; hence criticism brings about thought, as does antagonism. It might be recalled that Morton died of a broken heart because of the severe and unjust criticism of the use of ether. The same may be said of any new methods. I consider this one of the greatest discoveries of the age. Like Dr. Park and others, careful use makes many enthusiasts.

Dr. Cross: By experiments on the cadaver I have found that the needle did not penetrate a single nerve. There is a certain amount of tension in a nerve, and when the needle is inserted the nerve is pushed away and no damage done.

Dr. Morton: No case of sepsis has ever been reported. There is an idiosyncrasy, but by the dry method one product is driven off, which, in small doses, is not very poisonous. Proper sterilization is very important.

SHALL WE TEACH HYGIENE IN THE PUBLIC SCHOOLS.

Dr. W. S. Fowler, Bakersfield, read a paper with the above title. [To be published.]

On motion, the suggestions offered in the paper were endorsed by the society, with the request that the matter be brought to the attention of Mr. Kirk, state superintendent of schools.

PUS IN FEMALE PELVIS.

Dr. T. M. Hayden, Fresno, read a report on the above subject. [To be published.]

Dr. J. R. Davidson, Fresno: This is a subject of vital importance to the profession. Pus in the pelvic cavity, as a rule, enters through the tube from infection, sometimes it passes through the wall. Forty per cent of the cases come from gonorrhea, sixty per cent from absorption, labor, instruments, etc. The character of the pus makes a great difference as regards death and treatment. Gonorrheal pus is not fatal, is infectious, and its effects, as a rule, are light in character. Staphylococcic and streptococcic pus produce severe peritonitis. The rule is: Where we find pus, get it out. Get drainage and free vent to the pus. If there is simply enlargement of a tube, with infiltration and hardening of tissue around it, dilate the cervix and use massage, which sometimes effects a cure. When pus passes out into the cellular tissue, massage and general local treatment will have no effect. When there is a mild form of infection, a slight pain, a few days in bed, rest for a week, with local treatment, will oftentimes effect a symptomatic cure, and the patient may go on for years with slight attacks of ovarian pain and soreness, etc. If there is a violent attack of infection, with sweating, severe pain, tumefaction, a tender mass, uterus fixed, then there is pus. No local treatment will be sufficient. Aspiration assists the treatment; radical operation sometimes sets up peritonitis; if necessary, aspirate again, and in time the radical operation may be done without danger, because the pus is sterile. After thorough disinfection, scissors may be introduced into the cul de sac to the side and in the axis of the pelvis, when, through a large opening, the fingers may be introduced to break up adhesions and open up pus sacs. After thorough washing, the cavity may be packed, and in time the fistula heals. In other cases, an abdominal operation is necessary. Some writer asserts that 75 per cent of abdominal work is due to gonorrhea.

Dr. R. O. P. Phillips, Kingsburg, favors all that has been said, except the last remark, wherein it is stated that 75 per cent of young men have had gonorrhea. He doubts this. Such authors practice in cities; if they lived in the country, they would find that not more than 10 per cent suffered from this disease.

Dr. W. S. Fowler, Bakersfield, in making some statistics for a charitable institutions, out of 75 to 80 indoor patients, and 50 to 150 outdoor patients, found that more than 70 per cent had had gonorrhea.

Dr. Phillips, while assistant at Mercy Hospital, Chicago, found that more than 10 per cent had gonorrhea.

IRITIS, ITS SYMPTOMS AND TREATMENT.

Dr. D. H. Trowbridge, of Fresno, read a paper on the above subject. [Published at page 123.]

Dr. W. S. Fowler, Bakersfield: This paper is very complete. A difference in educational methods, especially in hospital practice, where iritis is a common disease, renders the methods of treatment somewhat variable. There are times when all remedies fail, and the diagnosis becomes doubtful. We must insist on a careful differentiation from conjunctivitis. One is a very dangerous condition; the eye is permanently injured by iritis, if treatment is not prompt and sufficient. The moving and contraction of the iris pulls on the adhesions, and after a case has seemingly been cured a second attack occurs. In my college days it was insisted that a ring around the sclera was a diagnostic point between specific and simple iritis. In iritis the ring was red, and the damage was brought about throught this ring's injuring the sclera, wherein lies the danger. A further distinction between conjunctivitis and iritis is that the veins are inflamed on the surface in the former, and deeper in in the later condition. It is hard to suppose a case of conjunctivitis without some iritis. Treatment is the same for all forms. Hot sterile solutions act synergistically to atropin; sometimes scopolamin is much more active than atropin. When there are adhesions without symptoms of an acute attack, they may be broken up by atropin, one drop a day, even for weeks, of a two per cent solution. The time to stop the administration is uncertain. Scopolamin is not lasting in effect. When occasion demands, use stronger solutions. I use four, five, or even twenty grains to the ounce, but I remain by the side of the patient, to watch for systemic poisoning. I always prescribe that the nasal duct be closed, with head turned to the side, and in case of too rapid absorption give a dram or more of brandy or hypodermic of morphin. As is the case with all other belladonna preparations, blonds and blue-eyed patients are more susceptible than dark eyes and brunettes to the action of the drug. My results warrant me in saying that any patient is better to suffer from dilation than run any risks. Dr. Walker wishes to emphasize the importance of an accurate diagnosis, especially upon the general practitioner. It is far better to err in using mydriatics, because of the possible serious results. In cases of glaucoma, or, rather, where this condition is suspected, it is better to clear up the diagnosis by the use of mydriatics than have iritis. I prefer scopolamin for quick and rapid effects. The number of remedies are limited; the diagnosis is the important point. Pain is worse at night, usually about three or four A. M. The ophthalmoscope shows little pigment spots on the lens where adhesions had formed.

Dr. Lilley: This paper has cleared away many points that were otherwise obscure to me.

Dr. Fowler: The action of any mydriatic is mechanical; it draws away the membrane, thereby relieving friction and the pain.

Dr. G. A. Hare, Fresno, wishes to confess a manifest distrust in instilling such large doses into the eye; has had alarming symptoms from such use, and does not wish to repeat the experience. Atropin is far more dangerous in large doses than the use of long-repeated small ones.

Dr. Fowler wishes to explain that he uses the weaker solutions until they fail to do their work, then large doses are the only means left; and with the caniliculus closed and a proper position of the head, he does not fear systemic poisoning. On one occasion, through mistake, he had taken one grain of atropin; symptoms of poisoning developed within an hour; he then ordered one-fourth grain of morphin every half hour, until pulse and breathing were reduced. Apomorphia was given to produce vomiting; pupils remained dilated for a week; a metallic taste lasted fully as long.

Dr. Russell: It is most important to know how to make an early diagnosis. With regard to differential diagnosis, I would like to inquire as to the character of the pain.

Dr. Trowbridge: In reply to the question as to pain in glaucoma: The pain is in the eye; it is a pressure pain, due to increased tension; when very severe it causes a sick feeling in the stomach and sometimes vomiting. The most important distinction in glaucoma is the cutting down of the field of vision at various angles with the increase of the disease. I have never used twenty grains of atropin to the ounce, but fifteen. I do not give these solutions without a nurse to watch the patient; sometimes such strengths are necessary; I have often continued them every two or three hours. When you wish to break up adhesions, these doses are necessary; sometimes they draw the border back, but do not break up the adhesions. I sometimes use for weeks a solution of eight to ten grains to the ounce. An eye that requires such heroic doses does not absorb rapidly, and we do not get the poisoning effect.

Dr. Hare: When there is posterior synechia, the adhesions can be broken up by long-continued doses, and pain relieved by heat, etc.